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ABSTRACT

This document details the proceedings of the Fifth Meeting of the Steering Committee of the SEAMEC Regional Centre for Education in Science and Mathematics (RECSAM) convened in Tokyo, Japan, from March 31-April 7, 1969. From this meeting, steps were taken to broaden the membership of the International Advisory Council, ways and means of strengthening links with international organizations such as UNESCO were discussed, and two regional workshops were proposed to develop a biology textbook and a new approach to teaching science at the primary level. The daily proceedings of the meeting are detailed. Contained in the Appendices are: (1) the reports and addresses presented; (2) guidelines; (3) current and revised budgets; (4) workshop proposals; (5) committee reports; (6) the meeting program; and (7) a list of participants. (BT)

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SINGAPORE
THAILAND
VIETNAM

REPORT OF THE FIFTH MEETING OF THE STEERING COMMITTEE SEAMEC REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS

Convened by

the Project Office of the **SEAMEC Regional Centre**
for Education in Science and Mathematics Malaysia
in cooperation with the **Government of Japan.**

Project Office,
Malayan Teachers' College,
Penang, Malaysia.

National Education Centre,
Tokyo, Japan.
March 31 - April 7, 1969.

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FINAL REPORT OF THE FIFTH MEETING OF THE STEERING COMMITTEE SEAMEC REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS

Convened By

the Interim Project Office of the SEAMEC Regional Centre for Education in Science and Mathematics in Penang, Malaysia in collaboration with the Japanese Government and the Japanese National Commission for UNESCO, Tokyo, Japan, and held at the National Education Centre, Tokyo, Japan.

Interim Project Office,
c/o Malayan Teachers' College,
Penang, Malaysia.

March 31 - April 7, 1969.
Tokyo, Japan.

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SUMMARY

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SUMMARY

With the cooperation of the Government of Japan, the Fifth Meeting of the Steering Committee of the SEAMEC Regional Centre for Education in Science and Mathematics (RECSAM), situated in Penang, Malaysia was convened in Tokyo from 31st March to 7th April, 1969. Mr. Ryoji Ito, Secretary-General of the Japanese National Commission for UNESCO, addressed the gathering and declared the Meeting open at 10.00 a.m. on 31st March at the National Education Centre, Tokyo, Japan.

The objective of RECSAM is to help improve the teaching of Science and Mathematics within the SEAMEC Member countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam). This effort will start initially at the elementary and secondary school levels.

The Fifth Steering Committee Meeting was held outside the SEAMEC region because RECSAM was desirous of taking advantage of the extensive knowledge base and experience in the sciences existent in Japan. The Committee also believed that by establishing closer professional ties with Japanese scientists, educators, and manufacturers of scientific equipment, that the technical programmes of the Centre could be strengthened. The fact that almost simultaneously with the meeting, the Japanese Foreign Minister, Mr. Kaiichi Aichi announced increased economic assistance to the countries of Southeast Asia proved the importance of establishing such relationships.

The following were present at the opening ceremony:- the Acting Director, SEAMES, Dr. Soemantri Hardjoprakoso, a representative from the Japanese Ministry of Foreign Affairs, representatives from SEAMES Headquarters and the Regional Centre, delegates from the SEAMEC member participating countries consisting of the Republic of Indonesia, Malaysia, the Republic of the Philippines, the Republic of Singapore, the Kingdom of Thailand and the Republic of Vietnam, officials of the Japanese Ministry of Education as well as consultants and observers, representatives of the British Council, the Japanese National Commission for UNESCO, Asia Foundation, the National Science Foundation, observers from the Diplomatic Corps of interested countries and observers representing other interested organizations.

At the opening ceremony addresses were also given by the Acting Director, SEAMES, Dr. Soemantri Hardjoprakoso, and Mr. J.E.B. Ambrose, Chairman of the Steering Committee.

During the plenary sessions, the financial position of the First Interim Year of the Nurturing Period (July 1st 1968 to 30th June 1969) was reviewed, and the Budget for the Second Interim Year of the Nurturing Period (1st July 1969 to 30th June 1970) was revised. The technical programmes planned for these two periods were reviewed in detail.

A Report of the Chairman's visit to Japan in November/December, 1968 to prepare the way for the Fifth Steering Committee in Tokyo was presented.

The Meeting was also informed of the progress achieved in respect of the Architectural and Engineering programme of the Regional Centre in Penang, the first phase of which is expected to take shape in January 1970, and the second phase is expected to be completed in the latter half of 1971. The Meeting also studied and approved the draft for a brochure publicizing the Regional Centre.

Steps were taken to include on the International Advisory Council prominent educators in science and mathematics from Japan as well as members from the industrial sector of the U.S.A., the Netherlands and Malaysia. Professor Yoshinobu Kakiuchi has been invited to serve on the Council and he has agreed to do so.

Ways and means of strengthening links with National and International Organisations such as UNESCO, the Japanese National Commission for UNESCO, the National Institute for Educational Research, Japan, and the Overseas Technical Co-operation Agency of Japan, were also discussed.

One important topic discussed was Inter-Regional Project Relationships, and steps were outlined for promoting closer cooperation between the Regional Centre for Education in Science and Mathematics in Penang, and the Regional English Language Centre, Singapore, the Regional Centre for Graduate Study and Research in Agriculture, Los Banos, the Philippines and the Regional Centre for Tropical Biology in Bogor, Indonesia.

During a tour of Osaka, Kyoto and Nagoya, the delegates were guests of the Japanese Government. Visits were made to several educational and industrial establishments with fruitful results. Among the places visited were the Osaka Prefectural Science Education Centre, Osaka City University (to meet the Committee for Southeast Asian Studies), the Shimadzu Science Equipment Division Factory at Kyoto, the Nagoya Municipal Science Museum, with which the delegates were most impressed and the Yagami Science Equipment Manufacturing Company at Nagoya. The Japanese National Commission for UNESCO also very kindly arranged a half-day historical tour of Kyoto for the delegates.

A very useful and informative symposium on science and mathematics education in Japan was held on Sunday, 6th April, and the eminent Japanese science and mathematics educators who took part in this symposium were Professor Yoshinobu Kakiuchi, a physicist of world renown, Professor Kentaro Yano, Professor Tadasu Kawaguchi and Mr. Hideo Ohashi, as well as science and mathematics specialists of the Ministry of Education, Japan.

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BACKGROUND INFORMATION ON RECSAM

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BACKGROUND INFORMATION ON THE SEAMEC REGIONAL CENTRE FOR EDUCATION IN SCIENCE & MATHEMATICS

A. BRIEF HISTORY:

SEAMES, which is the acronym for "South East Asian Ministers of Education Secretariat", came to life as a result of a meeting of the Ministers of Laos, Malaysia, Philippines, Singapore, South Vietnam and Thailand in Bangkok on November 30, 1965. (Indonesia has subsequently joined the SEAMES). An ad hoc Secretariat was formed in Bangkok in December 1965 and its initial responsibility was to prepare proposals for regional co-operation in selected educational fields.

FEASIBILITY STUDY 1966

During the early part of 1966, SEAMES appointed a Feasibility Team, composed of Dr. W. Eilers, Representative of Asia Foundation, Malaysia, Dr. H. Foncannon of the National Science Foundation, United States of America and Mr. C. C. Little of the Summer Science Institute Programme, USAID/ED, India, to conduct a preliminary study relative to a proposed Regional Centre for Education in Science and Mathematics for South-East Asia. The report of the Feasibility Team was examined at the Technical Workshops held in Kuala Lumpur, Malaysia, in July 1966 and further discussed by a Select Committee of Permanent Secretaries of the Ministries of Education of member countries on 17th to 21st October, 1966, in Bangkok. This proposal, together with nine other proposals, was then presented to the Second Conference of the Ministers of Education held in Manila in November 1966, which Indonesia attended for the first time.

Five regional projects as shown on the next page were approved at this Second Conference, namely the Asian Institute of Technology in Bangkok, Tropical Medical Centres in the member countries, a Regional Centre for Agriculture at Los Banos, Philippines, a Regional English Language Centre at Singapore and a Regional Centre for Education in Science and Mathematics at Penang, Malaysia. *

B. FIRST PRE-PROJECT PHASE - MAY TO DECEMBER 1967

In May 1967, the Steering Committee for the proposed Regional Centre for Education in Science and Mathematics, composed of two delegates from each of the six participating countries, held its First Meeting in Penang, Malaysia. At this First Meeting, the Steering Committee recommended a Budget of US$72,423 to carry out certain pre-project activities to enable it to identify the problems of teaching Science and Mathematics in this region and to prepare a Plan of Operations for the Regional Centre.

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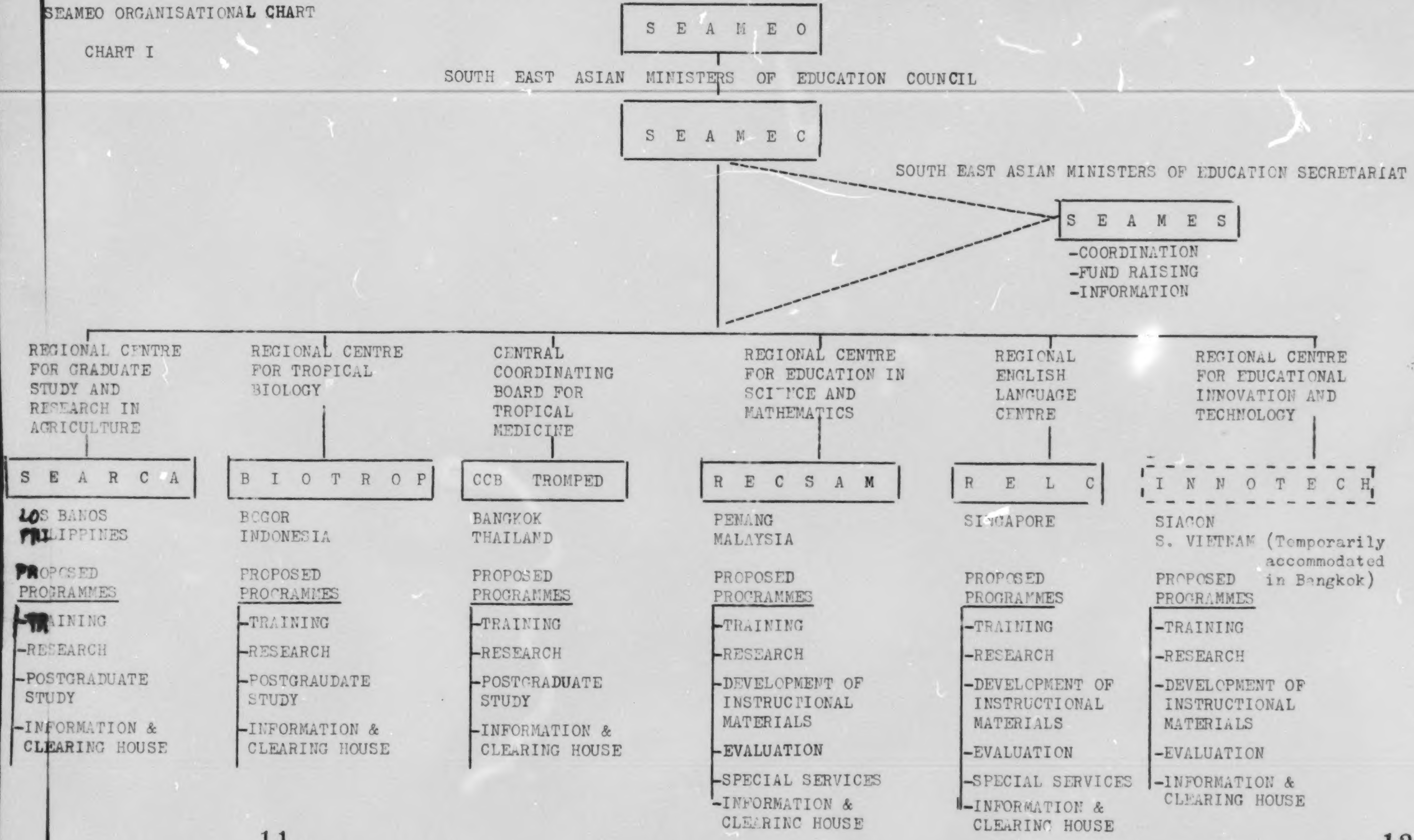
* The Regional Centre for Educational Innovation & Technology at Saigon, Vietnam, was approved subsequently.

THE SOUTH EAST ASIAN MINISTERS OF EDUCATION ORGANISATION

SEAMEO ORGANISATIONAL CHART

CHART I


S E A M E O
SOUTH EAST ASIAN MINISTERS OF EDUCATION COUNCIL
S E A M E C
SOUTH EAST ASIAN MINISTERS OF EDUCATION SECRETARIAT
S E A M E S
-COORDINATION
-FUND RAISING
-INFORMATION
REGIONAL CENTRE FOR GRADUATE STUDY AND RESEARCH IN AGRICULTURE
S E A R C A
LOS BANOS PHILIPPINES
PROPOSED PROGRAMMES
-TRAINING
-RESEARCH
-POSTGRADUATE STUDY
-INFORMATION & CLEARING HOUSE
REGIONAL CENTRE FOR TROPICAL BIOLOGY
B I O T R O P
BOGOR INDONESIA
PROPOSED PROGRAMMES
-TRAINING
-RESEARCH
-POSTGRAUDATE STUDY
-INFORMATION & CLEARING HOUSE
CENTRAL COORDINATING BOARD FOR TROPICAL MEDICINE
CCB TROMPED
BANGKOK THAILAND
PROPOSED PROGRAMMES
-TRAINING
-RESEARCH
-POSTGRADUATE STUDY
-INFORMATION & CLEARING HOUSE
REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS
R E C S A M
PENANG MALAYSIA
PROPOSED PROGRAMMES
-TRAINING
-RESEARCH
-DEVELOPMENT OF INSTRUCTIONAL MATERIALS
-EVALUATION
-SPECIAL SERVICES
-INFORMATION & CLEARING HOUSE
REGIONAL ENGLISH LANGUAGE CENTRE
R E L C
SINGAPORE
PROPOSED PROGRAMMES
-TRAINING
-RESEARCH
-DEVELOPMENT OF INSTRUCTIONAL MATERIALS
-EVALUATION
-SPECIAL SERVICES
-INFORMATION & CLEARING HOUSE
REGIONAL CENTRE FOR EDUCATIONAL INNOVATION AND TECHNOLOGY
I N N O T E C H
SIAGON S. VIETNAM (Temporarily accommodated in Bangkok)
PROPOSED PROGRAMMES
-TRAINING
-RESEARCH
-DEVELOPMENT OF INSTRUCTIONAL MATERIALS
-EVALUATION
-INFORMATION & CLEARING HOUSE

Following upon a request made to the U.S. Government through SEAMES for the necessary funds to carry out these pre-project activities, a letter of agreement was signed on the 30th of June 1967 between the Hon'ble The Minister for Education, Malaysia, and the U.S. Ambassador to Malaysia, approving a budget of US$50,000 towards financing the following pre-project activities of the Regional Centre for the interim phase, July to December 1967:

(i) The First Meeting of the Task Force, composed of top-level educators from the member countries, representing the five subject areas of Biology, Chemistry, Elementary Science, Mathematics and Physics, was held at Singapore from 26th to 27th June, 1967, to draw up guide-lines for National Seminars in Science and Mathematics to be held in all member countries.

(ii) Six National Seminars in Science and Mathematics in the six participating countries were held between July 20 and August 15, 1967.

(iii) A Regional Seminar in Science and Mathematics was held at Penang, Malaysia, from 12th to 15th September, 1967, attended by five delegates from each of the six member countries as well as a number of international consultants to study the reports of the National Seminars and to draw up programme activities for the Regional Centre.

(iv) The Second Meeting of the Task Force was held in Penang from 16th to 19th September to draw up a Draft Plan of Operations for the Regional Centre.

(v) The Second Meeting of the Steering Committee was held in Bandung, Indonesia, from 16th to 19th October to review the Preliminary Draft Development Plan of Operations for the Centre.

At the Second Meeting, the Steering Committee approved the Preliminary Draft Development Plan, prepared by the Interim Project Office, for submission to the Third Conference of Ministers of Education. At the same time, it requested extension of the present interim phase to June 1968 in order to refine the Draft Development Plan and to work out details of the various specific proposals, including Architectural and Engineering Studies.

The Steering Committee agreed on the following broad objectives for the Regional Centre:

> "To help participating countries in improving the teaching of Science and Mathematics in the Region in order to lay the foundations for meeting the technically and scientifically trained manpower requirements of the Region. It is proposed to start initially at the elementary and secondary levels and to involve teacher-training institutions and Colleges of Education, Faculties of Mathematics and Science and other Faculties as may be necessary in implementing the programmes."

It was also agreed that the Regional Centre should not duplicate but instead should complement and supplement the efforts and programmes of existing national, educational, academic and research centres in the member countries. It is vitally important that these national centres develop in parallel with the Regional Centre and gather strength and momentum through close articulation, co-ordination and co-operation with the Regional Centre. Priorities in the programme of the Regional Centre should therefore be given to highly selective activities, which will bring maximum benefit to as many member countries as possible, and which could most economically and efficiently be offered at the Regional Centre. Personnel selected from member countries on completion of their training at the Regional Centre should act as "catalysts" to train the additional personnel required in the various member countries.

SECOND PRE-PROJECT PHASE: JANUARY 1, 1968 - JUNE 30, 1968.

Following upon a request made to the United States Government through SEAMES for the necessary funds to carry out the extended Pre-Project activities, an amendment to the Letter of Agreement dated June 30, 1967 was signed on January 16, 1968 between the Minister of Education, Malaysia and the U.S. Ambassador to Malaysia. Funds amounting to US$39,140 were provided to cover costs of the continued activities of the Centre.

During the months of November and December 1967, January and February 1968 various programme recommendations were received from the Steering Committee and Task Force members, National Co-ordinating Committees and Dr. R.M. Straw, Science Consultant U.S. Peace Corps, Malaysia. As a result of these additional inputs the Project Office sent out to Task Force Members a set of new guidelines, terms of reference, plan of action, and format for writing details of project proposals. The reviewed and refined project proposals prepared by Task Force and support members were then consolidated by the Project Office and distributed to various national groups for their comments and suggestions.

The Third Meeting of the Task Force, assisted by consultants from Australia, Ceylon, United Kingdom and United States, was held at the Malayan Teachers' College, Penang from April 30 - May 3, 1968. At this meeting the refined and revised project proposals were examined on the basis of feasibility and priorities. A programme of activities was recommended for the interim operational phase starting July 1969, for two or three years, and for the full operational phase starting July 1970/1971 for the next five years.

FINAL DEVELOPMENT PLAN - P5/SCMS/14 (2 PARTS)

The RECSAM Development Plan is the basic planning document for the professional work of the Centre. Together with the Government of Malaysia's Funding Plan (RCP.A27(7)) these documents present a 5-year complete picture of Centre professional programmes, management of programmes, staff acquisition, capital development and budgets.

This Final Development Plan went through a number of editions after the preliminary version was developed subsequent to the Task Force Meeting previously noted. The Project Office, with the assistance of Dr. Richard M. Straw of the U.S. Peace Corps, collated the different technical proposals into project abstracts which reflected a functional approach to regional needs rather than a purely subject area one. The essential elements of the original subject area proposal were generally retained however. The Project Office then evolved the rest of the Development Plan, using these project abstracts as the technical base.

The Final Development Plan and the Funding Plan, after extensive review by the Steering Committee, were then submitted to the Fourth SEAMEC Conference in Djakarta in January, 1969 and approved.

These documents will now serve as the basic guidelines for development and funding of the Regional Centre for Education in Science and Mathematics.

PROJECT PROPOSALS OR PROGRAMME OF ACTIVITIES FOR THE FIRST FIVE-YEAR FULL OPERATIONAL PHASE (1ST JULY 1970 - 10TH JUNE 1975)

Specific project proposals have been planned and arranged in order of priority for the first full operational phase. These project proposals are based on the needs of member countries in the region, as expressed in the six National Seminars and one Regional Seminar and evaluation by the Task Force and external consultants. During the first five years, the Regional Centre proposes to offer the following services and courses under the three functional divisions:

1. Training Division

   5 seminars and 43 courses are proposed for the training of 1122 key personnel from the region. The first pilot programme, which involved 20 SEAMEC participants, was held in August 1968 and covered four courses in Integrated Science, Nuffield Biology, Chemistry and Physics.

2. Research - Development - Evaluation Division

   A total of 59 courses for 1152 key personnel are proposed.

3. Information and Special Services Division

   The functions of this division are:

   1) making the expert knowledge of the Centre staff and its consultants available to participating member countries to solve their local problems, and
   2) assuming responsibility for the regional distribution of bulletins and newsletters relating to (i) activities connected with the Centre and its member countries, and (ii) international projects outside the region.

   The following continuous programmes have been planned.

   a) Facilities Consultant Services
   b) Regional Lecture Bureau
   c) Exchange and Fellowship Office
   d) Regional Textbook Project (Prototype)
   e) Regional Journal Project
   f) Regional Newsletter and Bulletin Services - Science & Mathematics Education Materials Bulletin
   g) Regional Science Education Film
   h) Science - Mathematics Library Bibliographic and Abstract Services
   i) Regional Bibliography of Biological Research

PROJECT BUILDING COMPLEX, STAFF AND EQUIPMENT:

Contribution by Malaysia:

The Regional Centre is operating for a period of two years from 1 July 1968 to 30 June 1970 (Interim Phase) with support services and facilities provided by the Malaysian Government through the Malayan Teachers' College at Penang. These facilities include four Science Laboratories (2 Chemistry, 1 Biology, 1 Physics), one Mathematics room and one Audio-Visual Aids laboratory, preparation rooms, workshops, a photographic dark room, a lecture auditorium, and a new library.

Permanent Centre:

The permanent Centre will be built in two phases. During Phase One the first hostel for 60 persons and a dining block (also serving as temporary administration offices and containing some classrooms) will be constructed by November 1969. During Phase Two an administration building, an information and exhibition centre, a library and Audio-Visual Aid (AVA) Centre, two teaching blocks, two additional hostels for 60 persons each (capable of handling 120 on a two person per room basis) a laboratory block, and some staff housing will be constructed. An International House being built by the Penang State Government will accommodate as many as 20 staff members of the Centre. In addition 10 apartments will be available near the site of the Penang Civic Centre, which will contain a large auditorium, several Committee and conference rooms and an exhibition area which could be used by the Centre as needed.

Staffing:

The Centre Staff will consist of the Director, Deputy Director, three Heads of Divisions (Training, Research & Development, and Information & Special Services)* twenty professional officers, a Librarian, and Audio-Visual Aids Specialist and an Information Systems Specialist, staff members, a Registrar and five consultants. There will be eighteen professionals from SEAMEC countries, twelve from Malaysia, two consultants from the U.S. and three from the U.K. The support staff numbering 63 will be both technical and general services personnel.

Equipment:

About two thirds of the equipment and books will be from U.S. sources and a third from Malaysia through prospective world wide donors. This equipment, which will be used to carry out training, research and information programmes, will include office, printing and duplication, science laboratories, prototype apparatus production workshop, and an Audio-Visual Aids unit. Supporting equipment will include a car and a van.

Permanent Five-Year Operational Phase - July 1, 1971 - June 30, 1975

The Funding Plan proposed by the Government of Malaysia for the Permanent Five-Year Operational Phase consists of three major areas:

1) Capital Costs and Equipment amounting to	US$2,830,000
2) Operational Costs amounting to	US$2,800,000
3) Special Funds amounting to	US$2,625,000
Total -	US$8,255,000

The Special Funds will provide for scholarships, travel grants, seminars and conferences, Steering Committee meetings, and national programmes.

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* Special Services and Information will be combined initially; however if demand for Special Services increases substantially, it will be made a separate Division.

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PROCEEDINGS OF THE FIFTH STEERING COMMITTEE MEETING

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PROCEEDINGS OF THE FIFTH MEETING OF THE STEERING COMMITTEE, MARCH 31 - APRIL 7, 1969, IN TOKYO, JAPAN.

OPENING CEREMONY

The Fifth Meeting of the Steering Committee of the Regional Centre for Education in Science and Mathematics was officially opened at 10.30 a.m. on Monday, 31st March 1969 in the National Education Centre, Kasumigaseki, Chiyoda-ku, Tokyo, Japan, by the Secretary-General of the Japanese National Commission for UNESCO, Mr. Ryoji Ito.

ADDRESSES

The Chairman of the Steering Committee, the Acting Director of SEAMES and the Secretary-General of the Japanese National Commission for UNESCO addressed the Meeting at the Opening Ceremony. Their speeches are given in Appendices 1A, 1B & 1C.

BUSINESS

1. ADOPTION OF THE AGENDA

The proposed agenda was accepted with no changes.

2. ELECTION OF RAPPORTEUR

The Chairman announced that as the Rapporteur, Mr. Chan Kai Yau of Singapore, was unable to attend the Meeting, it was necessary to appoint a rapporteur for the Meeting from amongst the Steering Committee Members present. Accordingly, Mr. John Tseng of Singapore was proposed and seconded and duly appointed Rapporteur for the Meeting.

3. REPORT OF THE FOURTH STEERING COMMITTEE MEETING HELD AT THE NATIONAL LIBRARY, BANGKOK - 7TH TO 9TH NOVEMBER 1968 (DOCUMENT P5/SCMS/15)

The report was accepted by the Committee after the following corrections were made:

(a) page 17 - 15.2 - "Dr. Bentley Glass of the University of Massachusetts" amended to read "Dr. Bentley Glass of New York University, Stony Brook, New York."

(b) page 18 - 16.6 - "tough" in the last line but one to be corrected to "touch".

(c) Appendix 12 - page 2 - V. Travel Per Diem - Trip to Ceylon .... "CAS" to read "CAAS".

4. MATTERS ARISING

4.1 Special Adviser

The meeting noted that at the last meeting of the Steering Committee the role and functions of the Special Adviser had not been defined. Under article 5 of the Constitution the meeting noted that there is no provision for increasing the number of members of the Steering Committee from any particular country, but under article 6 of the Constitution, the Steering Committee is empowered to appoint or seek advice from experts outside or within the region. After some discussion it was agreed that the status of the Special Adviser would be one of an honorary nature. His advice would be sought through correspondence. In the case of Mr. Chang Min Kee, by virtue of his official position as Director of Malaysian Students, London, and his knowledge of the work of RECSAM, the members noted that he would be useful in publicising and obtaining suitable contacts for assistance and co-operation for RECSAM. If and when his presence was necessary at a particular meeting the Project Office, on the advice of the Steering Committee, would invite him to attend.

4.2 Appointment of Information Officer and Training Officer, and the question of International Salary Scales.

4.2.1 The appointments of Information Officer and Training Officer were being actively pursued by the Malaysian Government. The Chairman explained that two people have already been identified for the posts of Information Officer and Training Officer but, unfortunately, because of service problems, the secondment of these two officers had not as yet been successful. The Chairman said that the Programme Co-ordinator, Mr. C. Ganasalingam, who has been seconded to RECSAM, had taken the risk of coming to the Centre without any prior settlement about his service conditions. The question of his pension rights and indemnity have now been taken up with the Ministry of Education.

4.2.2 The question of International Salary Scales was discussed and clarification was given by reference to proposals contained in the Funding Plan (Page 17, paragraph 26 - 29, from Funding Plan Document RCP.A27(7)). It was further explained that the matter was discussed at the Fourth Meeting of the Steering Committee, as a result of which it was taken up with the SEAMES Director at the Project Directors' Meeting. This matter was raised with the intention of finding a solution to the problem, which has two aspects:-

First, it was recommended by the Steering Committee at its Fourth Meeting that when officers were posted to other SEAMEC Centres they would be paid their home salaries by their respective governments, and the Project Office was to take the matter up with the Director SEAMES with a view to getting the governments concerned to guarantee that the home salaries of such officers would be paid by them.

Secondly, certain delegates felt that even though officers were posted to the Centre from SEAMEC member countries, they should be paid salaries based on International scales. This had been approved as shown in resolution No.11 of the First Conference of SEAMEC which is as follows:

> "that in order to ensure high quality performance of senior and professional officers of all SEAMEC projects, their remuneration" should "be based on the acceptable international salary scale with appropriate modifications."

This resolution was mentioned by the Chairman at the Fourth SEAMEC Conference, and it was verbally agreed that each project would have to find an acceptable solution of its own. In order to achieve this, the Programme Co-ordinator was requested to write to all the Projects to find out what salary scales were being used to pay their professional staff.

4.3 Format of Brochure for RECSAM

Discussed under Item 9 of the Agenda.

4.4 Inter-Regional Project Relations

(i) Special English Comprehension Courses for participants at RECSAM Courses

(ii) Use of Facilities at BIOTROP by RECSAM Staff for Research

These were deferred for discussion under Item 13 of the Agenda.

4.4.1 Donation of Research Papers to RECSAM

The Programme Co-ordinator reported that the Southeast Asian Regional Centre for Graduate Study and Research in Agriculture (SEARCA) had donated to RECSAM a complete set of research papers published by the Faculty of Agriculture of the University of the Philippines over the past 50 years. He also reported that he has sent SEARCA a letter of thanks.

4.5 International Advisory Council

4.5.1 The Programme Co-ordinator reported that he was in touch with Dr. Bentley Glass and a brief report on the progress in the development of RECSAM would be included in the Pacific Science Association's Symposium of Science Education to be held at the University of Malaya, Kuala Lumpur from May 5th - 9th, 1969. Dr. Glass is Co-Chairman of the Conference with Dr. Kakiuchi.

4.5.2 The Chairman said that members of the Steering Committee and Project Office would have the opportunity to meet a number of prominent Japanese educators and scientists at a Symposium on Science and Mathematics Education to be held at the Takanawa Hotel on Sunday, 6th April. This meeting would serve to arouse the interest of these experts in the work of RECSAM, so that later on some of them might agree to serve on our International Advisory Committee.

4.6 Links with National & International Agencies

4.6.1 The Programme Co-ordinator reported that in the visit of the Chairman and himself to Japan from 27th November - 9th December, 1968, links had been established with:

(i) Osaka City University Southeast Asian Studies Committee

and (ii) Kyoto University Southeast Asian Studies Centre

4.6.2 The Programme Co-ordinator reported that he was unable to meet the Director of the East/West Centre, University of Hawaii when he visited the Region last fall.

4.6.3 The RECSAM Consultant was in touch with the Radhakrishna Institute of Technology and Administration (RITA), Bangalore, India. A visit by the Chairman and Programme Co-ordinator was under consideration in order to establish closer working relations with this organisation and with a view to determining possible areas of mutual co-operation. The members noted the gift to the Centre of 50 copies of "Research Ideas for Science Projects" published by the Ohio State University Faculty of Education in India in collaboration with the National Council of Educational Research and Training, New Delhi, and the U.S. Agency for International Development, India. Copies of this book had already been distributed to members of the Steering Committee, the Task Force and the Chairmen of the National Seminar Groups.

4.6.4 The Programme Co-ordinator had been unable as yet to get in touch with the Representative of the American National Academy of Sciences.

4.6.5 Further discussions were deferred to Item 11 of the Agenda.

4.7 BSCS Biology Adaptation Course

The Vice-Chairman confirmed that Dr. Hernandez, Director of the Science Education Centre, University of the Philippines, had agreed to run this BSCS Course, that invitations had already been sent out, and that the course was to be from May 20th to June 13th at RECSAM Penang. The number of participants, however, was being reduced from the original 30 to 24 to keep it within manageable proportions.

The meeting was informed that there were to be two other lecturers besides Dr. Hernandez and a US/AID Consultant, Dr. V. Larsen.

4.8 Research (RAG-1a) Project (Comparative Education Systems - SEAMEC Countries)

The Chairman reported that the question of inviting a qualified lecturer from the Malayan Teachers College, Penang to work part-time on this project was receiving active consideration.

4.9 Computer

The RECSAM Consultant had prepared a paper entitled "Status of Computer Survey" which was distributed to Members. The Chairman deferred discussion on the subject to GENERAL, and asked Members in the meantime to study the paper.

4.10 Development of Mathematics Kit

The Programme Co-ordinator reported that Miss E.E. Biggs had visited RECSAM and had placed her experience in Mathematics Teaching in the U.K., Europe and the U.S.A. at the disposal of the Centre. She also verbally accepted the invitation of RECSAM to become a member of RECSAM's International Advisory Council.

4.11 Report on Malaysia's Teacher Vacation Courses in August 1968

The Chairman was asked whether the recommendations of the Fourth Steering Committee Meeting - that courses be run in smaller groups (Fourth Steering Committee Meeting Report: p. 13 - 8.1.5 and 8.1.6) was being looked into. The Chairman said that the recommendations had been noted by the Programme Co-ordinator, and that there would be improvements in the future. The question of issuing Attendance Certificates to participants was being looked into.

4.12 In reply to a query as to what action had been taken on Resolution 8.2.2 of the Fourth Steering Committee Meeting,

> "that member countries organising their own national programmes in Science and Mathematics be approached to extend invitations to participants from fellow member countries, through the Regional Centre",

the Chairman said that the Project Office was in touch with the Chairmen of the National Co-ordinating Committees and appealed to the Steering Committee Members to assist the Project Office by keeping it informed of any National Courses that might be of general interest to the Region and which could be offered for participation of SEAMEC member countries.

5. REVIEW OF THE CURRENT BUDGET 1ST JULY 1968 TO 30TH JUNE 1969

The Programme Co-ordinator explained that during February 1969, several discussions were held by the Chairman and himself with US/AID officials to review the current budget. The proposed ... reviewed budget (Appendix 5) was presented by the Programme Co-ordinator at the meeting and the important changes explained. Items of particular interest that were noted by the members were:

(1)	Consultant-Computer Needs Survey	US$4,800
(2)	Purchase of one Van	3,500
(3)	Purchase of reference books for Training and Research programmes	3,000
(4)	Installation of telephone PABX unit	3,400
(5)	Subscriptions, periodicals	500

Members suggested that certain adjustments be made under Contingencies and that the number of participants for the BSCS Adaptation Course be reduced from 30 to 24 as requested by Dr. D. Hernandez.

6. PROPOSED BUDGET FOR THE INTERIM CENTRE (EXTENDED NURTURING PERIOD - 1ST JULY 1969 TO 30TH JUNE 1970)

The Programme Co-ordinator referred members of the Steering Committee to the proposed budget of US$412,802 approved by them at the Fourth Meeting of the Steering Committee. Since then the Chairman and the Programme Co-ordinator had had several discussions with US/AID officials on this matter.

It was explained to members that US/AID was prepared to release funds amounting to only US$130,000 which would have to be shared between the operational costs and special funds of the Regional Centre. Moreover, in correspondence with the Director of SEAMES, the Project Office was informed that SEAMES was not in a position to contribute its share of special funds as it was just beginning to plan its fund raising activities inside and outside the Region; and therefore a token sum of US$10 was inserted in the Budget as SEAMES' contribution.

... The Programme Co-ordinator then outlined the various changes that had to be made in the original proposed budget. A reduction had to be made in the numbers participating in the training and research courses, as well as in operating and travel costs, in order to keep within the financial provision of the revised budget. As a result of these changes, the revised budget amounting to US$215,802 taking into account the changes referred to earlier, was approved by the members (Appendix 6).

7. REPORT OF VISIT TO JAPAN IN NOVEMBER/DECEMBER 1968 BY MR. J.E.B. AMBROSE, CHAIRMAN OF THE STEERING COMMITTEE AND MR. C. GANASALINGAM, PROGRAMME CO-ORDINATOR.

... Report accepted without any questions being asked (Appendix 7)

8. PROGRESS REPORT OF ARCHITECTURAL & ENGINEERING STUDIES

The Programme Co-ordinator reported that since the last meeting of the Steering Committee, the Final Master Plan of the Centre had been officially approved. A copy of this plan was displayed at the meeting. Later, the Programme Co-ordinator showed some slides on floor plans of the 1st Phase buildings and site of the Regional Centre. The Architect was engaged in preparing detailed working drawings for the first phase. Mr. Paul Beidler, the Consultant Architect to US/AID Bangkok is now in close touch with the Architect so as to work out a schedule of cost estimates of the proposed 1st Phase buildings for presentation to US/AID.

... The revised schedule of the Architectural & Engineering work and the phased building programme (Appendix 8) was explained to members by the Programme Co-ordinator. It was noted that there would be a slight delay in starting the construction programme for the First Phase of the Project. Work on the Second Phase will begin in March 1970 and end in December 1971.

9. BROCHURE OF THE REGIONAL CENTRE

A dummy brochure prepared by a special consultant, Mr. Sterling Seagraves, and the Project Office was passed round to members for their perusal, and members were asked to comment on it. It was suggested that at least one photograph should be included from each member country. Steering Committee members were asked to mail suitable pictures to the Project Office by 20th April (one colour and one black and white) so that a brochure could be prepared without any delay.

10. INTERNATIONAL ADVISORY COUNCIL

10.1 The International Advisory Council of RECSAM consists, at present of the following:

1. Professor H.F. Halliwell,
   Professor of Chemical Education,
   University of East Anglia,
   Norwich, United Kingdom.

2. Dr. Bentley Glass,
   Academic Vice President,
   New York University,
   Stony Brook, New York, U.S.A.

3. Professor Hugh Philp,
   Professor of Education and Head of School,
   MacQuarie University,
   Eastwood, N.S.W., Australia.

4. Professor Marshall H. Stone,
   University of Massachusetts,
   Amherst, Massachusetts, U.S.A.

5. Mr. B.J.P. Alles,
   Deputy Director-General,
   Secondary Education Branch,
   Ministry of Education,
   Malay Street,
   Colombo 2, Ceylon.

6. Miss E.E. Biggs,
   Her Majesty's Inspector,
   Ministry of Education U.K.,
   London, England.

10.2 Members of the Steering Committee were asked to suggest other names for the International Advisory Council. The Chairman said that he had spoken unofficially to Professor Yoshinobu Kakiuchi, Institute for Solid State Physics, University of Tokyo, about serving on the International Advisory Council, and the professor said that if he were officially invited, he would accept. Professor Kakiuchi is due to visit Kuala Lumpur in May, to attend the Pacific Science Association Symposium of which he is Co-Chairman with Dr. Bentley Glass. The Chairman has invited him to visit RECSAM when he is in Malaysia.

It was also suggested that some members from the Industrial Sector be invited to serve on the Council with a view to increasing co-operation between Science and Industry to the benefit of the Centre and the Region.

The Chairman accordingly asked for nominations and three names were put forward:

1. Mr. William Wichman
   former Vice-President & General Manager of
   International General Electric Co.,
   and now Professor of Management Science,
   Rochester University, New York.

2. Mr. B.C. Sekar,
   Director, Rubber Research Institute,
   Kuala Lumpur, Malaysia.

3. Professor Dr. Ir. J. Smidt,
   Laboratorium voor Technische Physica,
   Technische Hogeschool
   (Lorentzweg 1),
   Delft - Holland.

The Chairman then ased the Programme Co-ordinator to write letters of invitation accordingly. He also explained that members of the Advisory Council would not be required to attend Meetings as a group but will be consulted from time to time, as and when their advice was needed. Furthermore, whenever they passed through this way, they would be welcome to visit the Centre.

11. LINKS WITH NATIONAL AND INTERNATIONAL AGENCIES

11.1 Links with International Agencies

It was pointed out that while the Centre was keen to establish links with world-wide organisations like UNESCO, it was never intended that representatives from RECSAM would wish to attend UNESCO Meetings which were merely of a general nature.

It was believed necessary, however, for RECSAM to actively participate in specific science and mathematics meetings of UNESCO and other agencies, scheduled both within the region and elsewhere. Also when specific RECSAM programmes are believed of importance to develop and enrich similar national programmes, RECSAM should take the initiative to send delegates. Mutual exchange of relevant information should, of course, be encouraged.

11.2 Links with National and International Agencies

The Chairman invited the delegates from each member country to suggest names of organisations in their respective countries with which it would be useful for RECSAM to establish relations. A list of such organisations will be found in Appendix 11.

The Programme Co-ordinator informed the meeting that links had also been established with the following National Agencies outside the region:

1. Science and Mathematics Project,
   Ministry of Education - Ceylon.
2. Asian Regional Institute for School Building Research,
   Colombo, Ceylon.
3. Ceylon Association for Advancement of Science -
   Biology Project,
   c/o University of Ceylon,
   Paredania, Ceylon.
4. Centre for Advancement of Teaching Techniques,
   MacQuarie University,
   North Ryde, N.S.W., Australia.
5. Committee for South East Asian Studies,
   Osaka City University,
   Japan.
6. South East Asian Studies Centre,
   Kyoto University,
   Japan.
7. Osaka Prefectural Science Education Centre,
   Japan.

It was also suggested that RECSAM should establish links with National Agencies and professional associations in countries outside the region, particularly in Japan, U.K., U.S.A. and Australia.

12. FORMATION OF NATIONAL CO-ORDINATING COMMITTEES (See Appendix 12.A for Guidelines)

Reports from Member Countries

12.1 Singapore

The Singapore delegate said that as his country was very small there was no necessity for a National Co-ordinating Committee to be formed, as the two Steering Committee Members could, without any difficulty whatsoever, do the work of a National Co-ordinating Committee. Therefore, there was no intention of forming one. All correspondence could be sent to Mr. Chan Kai Yau.

12.2 Vietnam

A National Co-ordinating Committee would be formed soon. Correspondence was to be sent to Mrs. Bui Thi Lam.

12.3 Thailand

Because of the recent change of Government, the National Co-ordinating Commitee had to be dissolved, but would be reformed soon. Correspondence was to be sent to the former Chairman, Mr. Charoon Vongsayanha.

12.4 The Philippines

A National Co-ordinating Committee has been formed under the Chairmanship of Dr. Dolores F. Hernandez. In the formation of this committee the guidelines laid down by the 4th Steering Committee Meeting have been followed as closely as possible. The Programme Co-ordinator wished to record his thanks to Dr. Hernandez for all the reports and minutes of meetings of the Philippines National Co-ordinating Committee.

12.4.1 One important project being planned is the try-out of materials developed in the United States by the Intermediate Science Curriculum Study of Florida State University. This project will be sponsored jointly by the Department of Education, University of the Philippines and UNESCO Paris. This try-out will be administered with the assistance of an American science educationist who was closely involved in the project in the U.S. It is expected to be launched in July 1969.

12.5 Malaysia

Malaysia is giving active consideration to the formation of a National Co-ordinating Committee. Meanwhile the Central Science and Mathematics Planning Committee is actually performing similar functions to those of a National Co-ordinating Committee. It has various Sub-Committees responsible for curriculum development, in-service courses, and testing and evaluation of various pilot projects which are being carried out as long term projects of school curriculum reforms through the Science Division of the Ministry of Education.

The various planned projects are as follows:-

12.5.1 The Integrated Science Course for junior high schools (1st trial began in January 1969 for 22 schools) for Year 1, with more schools taking part on a revised syllabus in the next two years. The same cycle will be repeated for years 2 and 3. The project will be completed by 1974.

12.5.2 A Primary (Elementary) Science Project for the first 3 grades of the Primary (Elementary) school will start operating in June 1969 for 100 classes. The objective is to modernise science teaching through weekend training of teachers in various districts, co-ordinated by the Science Division of the Ministry of Education.

12.5.3 Primary (Elementary) Mathematics Project - This will be organised along lines similar to the Primary (Elementary) Science Project mentioned in 12.5.2 above.

12.5.4 "New Mathematics" Project -

Plans are being drawn up to launch the above project similar to the Integrated Science Project.

12.5.5 Senior High School Programmes -

(a) Nuffield 'O' Level Curriculum

This is a 3-year programme conducted by visiting tutors from the U.K. in August of each year to "expose" high school teachers to the philosophy of Nuffield Science and train them to use new course materials.

(b) University Refresher Course for Higher School Certificate Science and Mathematics Teachers in April 1969

The main objective of this course is to introduce some new techniques and modern science concepts, including basic computer mathematics, at Higher School Certificate level.

All the above activities are being organised and co-ordinated by the Central Science and Mathematics Planning Committee. A National Science and Mathematics Education Centre will soon be established in Malaysia with the object of improving science and mathematics teaching at all levels. This will be followed by the setting up of science education centres in various states to strengthen the National Organisation.

12.6 Indonesia

The National Co-ordinating Committee which was formed before the new guidelines were spelt out is now being reorganised.

12.7 It was suggested that the Chairmen of the various National Co-ordinating Committees might meet together, either by themselves or in conjunction with Steering Committee Meetings. The Chairman pointed out that although this was desirable there were no funds for such meetings, but that the matter would be looked into and dealt with appropriately.

13. INTER-REGIONAL PROJECT RELATIONSHIPS - DISCUSSIONS WITH THE DIRECTORS OF THE REGIONAL ENGLISH LANGUAGE CENTRE AND THE TROPICAL BIOLOGY CENTRE

13.1 Special English Course

The Chairman outlined for the Members of the Steering Committee the gist of what had ensured in the meeting between RECSAM and Mrs. Tai of the Regional English Language Centre (RELC) regarding the feasibility of holding courses in Spcial English Comprehension for some participants at RECSAM courses, from Indonesia, Thailand, Vietnam and possibly Laos.

There was considerable discussion and a number of suggestions were made by Members of the Committee:

(a) That each member country could send specialist English Language teachers for a Specialist Course at RELC, and these would in turn train prospective participants of SEAMEC Centre courses, prior to their attending such courses.

(b) That member countries should wherever possible identify their candidates for SEAMEC Centre courses long beforehand, so as to enable these personnel to be given prior training in English should it be necessary.

(c) Alternatively, that participants who are lacking in English comprehension could attend a Special English "Crash" Course lasting one or two weeks immediately before commencement of their course.

(d) Another suggestion was that the script of lectures be sent beforehand to those participants who are weak in English, so that they can read through them and prepare themselves for the oral lectures later on. It was further suggested that a list of reference text books be sent to these participants beforehand.

The US/AID Regional Education Adviser suggested that where there were Specialist English Centres in member countries, these could be utilized for conducting Special English Comprehension Courses.

The Chairman suggested that as far as RECSAM was concerned it would be quite feasible to work out an English Course in parallel with the mathematics or science course concerned, during which, say for one hour a day, those needing extra English instruction might be given specialist training by qualified lecturers of the Malayan Teachers College, Penang.

When some members suggested that the question of lack of understanding of technical English was really no problem at all, the Programme Co-ordinator stressed that for RECSAM courses to be of optimum value, two-way communication (teacher/pupil as well as pupil/teacher*) was necessary, otherwise there would be no interchange of ideas.

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* RECSAM Research Course RAG-1a which is now getting under way using Malayan Teachers' College staff deals with this teacher/pupil communication problem.

13.2 Regional Centre for Tropical Biology (BIOTROP), Bogor, Indonesia.

13.2.1 The Programme Co-ordinator reported that BIOTROP was very keen to work with RECSAM in various projects in the future.

The Chairman said that BIOTROP had been invited to send an observer to the present meeting but they were unable to do so.

The telegram from BIOTROP was read out to the meeting:

"REGRET UNABLE TO ATTEND STEERING COMMITTEE MEETING STOP WITH HIGH CONFIDENCE FUTURE SUCCESS OF RECSAM"

SENDER: BIOTROP

13.2.2 The Programme Co-ordinator reported that there has been very close co-operation between RECSAM and BIOTROP. Dr. D. Tisna Amidjaja the Assistant Director of BIOTROP has called at the Regional Centre on two occasions to work out parts of the Development Plan of BIOTROP in co-operation with RECSAM. Mr. T. B. Slattery, Consultant to RECSAM has been assigned as part-time Consultant to BIOTROP. Through these two officials BIOTROP and RECSAM are in constant touch with the progress and development of their respective projects.

BIOTROP arranged an informal meeting of some members of its Advisory Council at the Technical Teachers' College, Kuala Lumpur on March 18th, 1968. The Chairman of the Steering Committee, Mr. J.E.B. Ambrose, the Programme Co-ordinator and two members of the Steering Committee and Dr. Phung Trung Ngan of Vietnam attended this joint meeting. There were discussions on the various subject areas where close co-operation could be worked out. A report of this meeting is given in Appendix 13.A.

A proposal to hold a joint session on the writing of a suitable Biology text using flora and fauna of the region was discussed. This matter was discussed under Item 14 in greater detail.

13.3 Other areas of Inter-Project Relationship

The Meeting asked whether any relationship had been established with SEARCA at Los Banos. The Chairman noted that links had already been established with SEARCA, and it was suggested that these could be strengthened in the field of Agriculture Science Education. He also noted that RECSAM had received from SEARCA a complete set of "The Philippine Agriculturist" published over the last 50 years.

There was another suggestion that the Institute of Medical Research (IMR), Kuala Lumpur could help with research in the field of parasitology. There was a suggestion that a three-way relationship between RECSAM, BIOTROP and the I.M.R. might be useful to help the I.M.R. work out the life history of vectors of parasites.

14. PROPOSED REGIONAL WORKSHOPS

14.1 Joint BIOTROP and RECSAM Discussions on the Writing of a suitable Biology Text for Use in Secondary Schools of the Region

The Programme Co-ordinator referred to Minutes 13.3 of the Fourth Steering Committee Meeting explaining that close co-operation between BIOTROP and RECSAM has been discussed. The suggested workshop will be held from June 2 - 4 among some members of the BIOTROP Advisory Council and participants in the RECSAM course for BSCS Adaptation conducted by Dr. Dolores Hernandez. Dr. V. Larsen will also be present as a Consultant. These dates have been chosen to take advantage of having both BIOTROP members returning from their Council Meeting in Chiengmai and RECSAM course participants at this joint discussion on the planning for this text book on Biology. It is hoped that a plan of action, guidelines and an estimated budget could be worked out at this joint workshop. The members agreed that this workshop would be very useful and asked the Programme Co-ordinator to take the necessary steps and plan the arrangements in consultation with Dr. D. Hernandez and the BIOTROP Centre Director, Dr. Otto Soemarwoto.

14.2 Biology Text-Book Compilation

In addition to the discussion mentioned in 14.1 above, the Meeting summarised the plan of action of the Biology Text-Book Compilation Seminar to be held from June 2 - 4 as follows:-

(1) to establish guidelines for the Biology Text-Book

(2) to form a plan of action

(3) to decide on target dates, if possible

(4) to make an estimate of the cost

14.3 Primary Science - A Process Approach - July 1970

The meeting resolved that a workshop to discuss a new science programme for elementary school (Science - A Process Approach) suggested by Dr. Foncannon (see Appendix 14) should be held some time in July 1970 to coincide with the ending of RECSAM Course TCE-1. It was also decided that the participants of this workshop should consist of TCE-1 participants and visiting consultant experts. It was suggested that, if possible, the workshop be tied into the planned curricula research programme. In particular, members of the Research team for RCE-1 (Curriculum Development - Elementary Science Materials) could be selected early enough to attend this workshop, which would then serve as the "kick-off" for the one year research project.

14.3.1 Planning Session for RECSAM Course TCE-1, incorporating the Workshop on "Science - A Process Approach".

Mr. A. Juele of the Philippines was elected Chairman of this planning session and it was decided that the session should be held in late June this year in the Philippines. The one representative from each country to be nominated to attend this meeting should be a person who has knowledge of, or who has examined the new Elementary Science Curriculum materials such as AAAS - Process Approach, ESS materials, Minnemast and others, and/or one who has responsibility for supervision of, or teacher training for, elementary science teachers.

15. DATE AND VENUE FOR THE SIXTH MEETING OF THE STEERING COMMITTEE

It was decided that the Sixth Meeting of the Steering Committee would be held from Tuesday 21st to Friday 24th October, 1969 in Saigon, if possible. If it is not possible to hold it in Saigon, it will be held in Singapore with at least 3 months' advance notice given.

16. GENERAL

16.1 Status of Computer Needs Survey

The Fourth Meeting of the Steering Committee in Bangkok discussed the advisability of accepting a free computer from a donor in the U.S.A. and approved a feasibility study to determine RECSAM needs, possible profit from rental, and overall cost/benefits. This study has been delayed because of unavailability of key people (in particular the U.S.A. expert who arranged the details of the gift and who knows the computer characteristics).

The meeting resolved that US$4,800 from the RECSAM current budget should be allocated as soon as possible (May 1969) for this computer needs feasibility survey, details of which are listed in Appendix 16.A entitled "Status of Computer Survey."

The meeting further resolved that the decision on computer acceptance and location be deferred until after the report was received and studied.

16.2 Meeting of Chairmen of National Co-ordinating Committees

It was suggested that Chairmen of the National Co-ordinating Committees be provided with an opportunity to meet either among themselves, or together with the Steering Committee during any of its subsequent meetings, to facilitate exchange of ideas and implementation of programmes.

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APPENDICES

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Address by Mr. J.E.B. Ambrose, Chairman, Steering Committee, at the Official Opening of the Fifth Meeting of the Steering Committee held in Tokyo, Japan, from 31st March to 7th April, 1969

Mr. Ryoji Ito, Secretary General of the Japanese National Commission for UNESCO, Dr. Soemantri Hardjoprakoso, Acting Director, SEAMES, Distinguished Guests, Members of the Steering Committee, Consultants, Observers, Ladies and Gentlemen.

It is my pleasant duty and privilege to welcome you all to the Fifth Meeting of the Steering Committee which is being held at the National Education Centre, Tokyo and to thank you for your kind presence. Previous meetings of this Committee have been held in member countries such as Penang, Malaysia - Bandung, Indonesia - Quezon City, Philippines and Bangkok, Thailand, but this is the first time that a meeting is being held outside the region.

I am extremely grateful to Mr. Ryoji Ito for his help and advice and also for kindly consenting to come along this morning in order to declare the Fifth Meeting of the Steering Committee officially open.

I would like to convey my heartiest congratulations to Mr. Sukich Nimmanheminda, the former Director of SEAMES on being elevated to the rank of Minister of Education recently.

I am sure he will continue to show the same keen and abiding interest in the various projects in his new capacity as a member of the Council of Southeast Asian Ministers of Education.

I am greatly indebted to Dr. Soemantri Hardjoprakoso, the Acting Director, SEAMES, who has come here to give encouragement to us by his presence.

It was unanimously agreed at the Fourth Meeting of the Steering Committee at Bangkok in November last year that the Fifth Meeting of the Steering Committee should be held in Tokyo because of the many advantages that could be derived from such a course of action. It was hoped that such a measure would enable members of the Steering Committee to have the benefit of holding discussions with experienced Japanese educators in the field of science and mathematics education and that the interest of various educational institutions and organisations in Japan would be aroused in the work of RECSAM to the mutual advantage of all concerned. It was also hoped that members of the Steering Committee would be able to obtain some ideas concerning basic school science equipment available in Japan and how these are produced at relatively low cost. At the same time it was thought that an opportunity would also be provided to them to examine some of the more sophisticated and advanced items of science equipment that instrument manufacturers have so expertly designed and produced in Japan at much lower prices than elsewhere.

Subsequent to this, swift follow-up action was taken by Mr. Ganasalingam and myself in visiting Tokyo to meet Mr. Ryoji Ito from 27th - 30th November, 1968 in order to discuss this matter fully and make the necessary arrangements to ensure that the Fifth Meeting of our Steering Committee would be successful. Several discussions were later held by us with the officials of the Japanese National Commission for UNESCO at the Ministry of Education as well as the Overseas Technical Co-operation Agency of Japan. During these informal discussions all the officials who were present indicated their very keen and sincere willingness to assist and make the necessary arrangements for holding this meeting in Tokyo. They, however, indicated that an official request to hold this meeting would have to be made by the Director of the Southeast Asian Ministers of Education Secretariat, Bangkok, to the Ministry of External Affairs of the Government of Japan.

As from the beginning of this year the Southeast Asian Ministers of Education Organisation became a legally constituted organisation as a result of the ratification of its Charter by five of the seven member countries. At the Fourth Conference of Southeast Asian Ministers of Education Council held in Jakarta from 7 - 9 January, the Ministers agreed that links should be established with international and other interested organisations outside the region so as to seek the maximum possible areas of co-operation and assistance to the various SEAMEC regional centres.

With this support from the Ministers, the Director of SEAMES, Bangkok very kindly addressed a letter to the Ministry of External Affairs. As a result of this, confirmation was received from Mr. Ryoji Ito, the Secretary General of the Japanese National Commission for UNESCO, Tokyo, Japan, that formal arrangements for holding the Fifth Meeting of the Steering Committee in Tokyo with the co-operation of the Ministry of External Affairs, Japan were well in hand.

To indicate the thoroughness with which Mr. Ryoji Ito and the officers of his department handled the matter, Mr. Ito sent two officers, Mr. Hiroshi Tsunoi and Mr. Noboru Noguchi who arrivedat the Centre in Penang on 13th March, 1969 and brought the news that the holding of the Fifth Meeting of the Steering Committee in Tokyo from 31st March - 7th April, 1969 was confirmed, and that the Japanese Government would give its co-operation in the matter. Moreover, the Japanese National Commission for UNESCO which hitherto had been making arrangements for this meeting unofficially was now given the responsibility of making all the local arrangements. In this connection they passed on the pleasant news that the Ministry of Foreign Affairs was studying the possibility of providing some financial assistance, such as the cost of local transport and the cost of renting a meeting place at the National Education Centre.

The Japanese National Commission for UNESCO then formed an Organising Committee under the leadership of Mr. Suganuma, the Deputy Secretary-General and two other officers, Mr. Sasaoka and Mr. Kato to provide professional and technical assistance along the lines of our discussions with them during our visit to Tokyo at the end of last year. However, some changes have been proposed in the schedule, and these will be incorporated in the revised schedule.

It has now been confirmed that the Ministry of External Affairs has very generously agreed to pay the local costs of travel to Osaka, Kyoto, and Nagoya and to provide a meeting place free of rent at the National Education Centre. It seems to me that after our arrival recently we have been getting more and more good news. The latest that I have heard according to a report in the recent issue of a Japanese newspaper is that the Foreign Minister, Mr. Kiichi Aichi who will head the Japanese Delegation to the Ministerial Conference for Economic Development of South East in Bangkok from 3rd to 5th April, is expected to announce that Japan is prepared to expand quantitatively and qualitatively her economic aid to South East Asia. This means that RECSAM and other SEAMEC projects can expect material assistance from Japan if our bids for such assistance are properly formulated and submitted through the proper channels.

The main objective in setting up RECSAM is to help member countries such as the Republic of Vietnam, the Republic of Indonesia, the Republic of Singapore, the Republic of the Philippines, the Kingdom of Thailand, the Kingdom of Laos, and Malaysia, to improve the teaching of science and mathematics with a view to laying the foundations for meeting their skilled manpower requirements.

During the first few years of operation RECSAM aims at improving the teaching of science and mathematics at elementary and secondary levels. As a first step, attention has been given to training key educators with a view to developing an Integrated Science Course for the first few years of secondary education in SEAMEC countries. Malaysia has a programme to improve the teaching of science in the first three years of the secondary school through a series of pilot projects on Integrated Science starting this year and experienced tutors for this programme were brought out in August last year from the United Kingdom to train our key educators at the national level. However, the Malaysian Government has been generous enough to invite participants from the region to share this experience. At the same time another set of tutors was engaged in training Malaysian science educators to launch pilot projects to update the teaching of science at upper secondary level using Nuffield 'O' Level materials; and this Malaysian programme too was thrown open to key educators from SEAMEC member countries. These two courses will continue for the next two years at least; and it is hoped that the key educators from the region will continue to participate in these courses.*

At the Regional Workshop in Tropical Biology held in Bandung in September last year, it was suggested that Malaysia should run an Ecology course for High School Biology teachers. It is to be noted that a Biology course to include Ecology is to be conducted at national level. In addition to this, courses in Physics, Chemistry and Mathematics have been arranged for the high school science educators. All these courses will be conducted at the University of Malaya from April 7 - 18, 1969 and key educators from SEAMEC member countries have been invited to participate in this programme.

To show that we are prepared to benefit from the Experience of other SEAMEC member countries, RECSAM is organising a biology course on adaptation of BSCS materials this year based on the experience gained in the Philippines to train 24 key educators from SEAMEC member countries. This course is being organised with the kind help and assistance of Dr. Dolores F. Hernandez, Director of the Science Education Centre in Manila and a consultant, Dr. V. Larsen from the United States. It is to be hoped that the borrowed lab facilities at the Malayan Teachers College, Penang will continue to be put to good use until our own buildings are ready.

The First Phase of our own buildings, which consists of a hostel for 60 participants and a temporary Administrative and Dining block will only be ready by about January next year and Phase II, which would consist of two more hostels and the administration, information and teaching complex, including science laboratories, will be ready in the latter half of 1971; but nonetheless, the work of RECSAM will continue to expand as we have now received a kind offer of assistance from the American Association for the Advancement of Science. Its Executive Secretary, Dr. H. Foncannon, has indicated his willingness to assist RECSAM in its programme of updating and upgrading the primary science curriculum of the region by organising a workshop which it is hoped will be held sometime in July or August 1970.

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* Through scholarships provided by RECSAM

The question of having links with national and international organisations, which was discussed at the Fourth Meeting of the Steering Committee and which was taken up at the Third Ministerial Conference at Jakarta, resulted in a decision being taken up by the Ministers that a close working relationship should be established with UNESCO and, accordingly, the former Director, Dr. Sukich addressed the Director General of UNESCO on this matter. We hope that as a result of these efforts UNESCO will take a much closer look at us and offer us all possible help as our experience in helping to improve mathematics and science education in this region could pave the way for similar regional co-operation in other continents.

Now I would like to say something about Inter-Regional Project relationships. The SEAMEC Regional English Language Centre is co-operating with and assisting RECSAM in planning suitable English Comprehension courses and programmes in technical English for RECSAM participants in science and mathematics courses.

The Regional Tropical Biology Centre in addition to offering training courses for key personnel in lab techniques, will also try to produce a pocket reference book on flora and fauna suitable for use by high school students. It has also promised assistance to enable us to produce a high school biology text using the flora and fauna of the region, and has offered its facilities for use by RECSAM staff. I am also pleased to acknowledge the receipt of research journals in tropical agriculture published by the University of the Philippines and donated through the co-operation of the Regional Centre for Agriculture in Los Banos, Philippines.

It is to be realised that the Ministers at the Fourth Conference of SEAMEC held in Jakarta in January this year supported the formation of National Co-ordinating Committees in each SEAMEC member country so as to ensure that the Centre programmes are properly co-ordinated with national science teaching activities. Up to date I am pleased to report that further progress has been achieved since our Fourth Meeting in Bangkok in November 1968, and that Thailand and the Philippines have formed their National Co-ordinating Committees, whilst Malaysia is in the process of forming one. It is hoped that other member countries would have their National Co-ordinating Committees formed before July 1, 1969.

In February this year a prominent mathematics educator, Miss A. E. Biggs, a member of Her Majesty's Inspectorate, came to Malaysia to conduct in-service courses for primary science mathematics teachers and visited RECSAM. She has kindly agreed to serve on the International Advisory Council of the Regional Centre in addition to the five other prominent science and mathematics educators of the Council mentioned at the Fourth Meeting of the Steering Committee. I am also pleased to report that she has also kindly consented to prepare written materials for a course in primary mathematics based on her experience in conducting in-service courses in primary mathematics, both in Malaysia and Singapore, which could be used in a pilot scheme to be organised by the Regional Centre.

I would now like to conclude by thanking the Government of Japan for co-operating with RECSAM through the Ministry of External Affairs and for very generously offering to pay for local travel costs and the cost of renting a meeting place at the National Education Centre, to Mr. Ryoji Ito, Secretary-General of the Japanese National Commission for UNESCO and his officers, especially the Deputy Secretary-General Mr. Suganuma, Mr. Sasaoka the Head of the Education Dept. and Mr. Kato his assistant for their invaluable, professional and technical assistance in organising this meeting, to Acting Director SEAMES, Dr. Soemantri Hardjoprakoso for his encouragement and presence, the U.S. Government for their very invaluable assistance, to Dr. R. Jacobs, for his invaluable expert services, to Mr. Ron Rogers our Liaison Officer in Kuala Lumpur for his help and advice from time to time, to Mr. Slattery the Resident Consultant of RECSAM for his contribution to the Centre, the Malaysian Government for the loan of facilities and support services of the Malayan Teachers' College, Penang, the Director of the Public Works Department of Malaysia, the Government of Penang, Malaysia, the State Engineer and the officers of his department for their assistance in planning the construction of Phase I and Phase II of our projects in Penang, Malaysia, the British Government for their keen interest in RECSAM and the invaluable assistance provided by them from time to time, to the Members of the Steering Committee for their valuable contributions and the sacrifices they have made in order to be present, and to all of you ladies and gentlemen for your kind attention and presence.

APPENDIX 1.B

ADDRESS BY DR. SOEMANTRI HARDJOPRAKOSO
ACTING SEAMES DIRECTOR
AT THE OPENING CEREMONY
OF THE FIFTH MEETING OF THE STEERING COMMITTEE OF THE REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS, IN TOKYO, JAPAN, FROM 31ST MARCH TO 7TH APRIL, 1969.

Your Excellency the Minister of Foreign Affairs,
Your Excellency the Minister of Education,
Mr. Secretary-General of the Japanese National Commission for UNESCO,
Members of the Steering Committee,
Distinguished Guests,
Ladies and Gentlemen:

I consider it a real pleasure and privilege to attend this Opening Ceremony of the Fifth Meeting of the RECSAM Steering Committee in the capacity of Acting SEAMES Director. His Excellency Mr. Sukich Nimmanheminda, recently the SEAMES Director, has resigned from the post of the SEAMES Directorship upon his appointment as Minister of Education of Thailand. Although this is the first time the SEAMEC Regional Centre for Education in Science and Mathematics holds its meeting in Japan, it is I am glad to say, the second time the Government of Japan has hosted a meeting of the regional centres of education within the orbit of the Southeast Asian Ministers of Education Organisation. Last November in 1968, if I may recall, the Overseas Technical Cooperation Agency on behalf of the Japanese Government also hosted the fifth meeting of the Central Coordinating Board of the SEAMEC Regional Project for Tropical Medicine and Public Health. I am happy to observe that this augurs well for the movement of regional cooperation in education in Southeast Asia, for continued interest on the part of the most wealthy and powerful neighbouring country of Southeast Asia cannot help but uplift the regional level of education and the regional cohesion in this part of the world.

As many of you in this distinguished gathering may be well aware, the Southeast Asian Ministers of Exucation Organisation (SEAMEO) has just emerged from an interim period of some three years, during which time the movement in regional cooperation in Education has had the opportunity to lay the minimum but essential foundation for a permanent and viable regional organisation. The main objective of this Organisation is to work for the betterment of education in Southeast Asia by creating or strengthening education centres of excellence within the region. The various member countries of the Organisation offer, individually and insofar as is possible, the facilities of their most developed educational institutions for the benefit of the region as a whole. In some instances, new regional education institutions have to be created afresh to serve the purpose, as is the case of the SEAMEC Regional Centre for Education in Science and Mathematics in Penang, Malaysia. The institution-building achievements of the Organisation during the past three years have shown that under the aegis and authority of the Southeast Asian Ministers of Education, and with adequate technical and financial resources, the academic world in its separate specialties could be brought together, as has never been done before in the history of this part of the world, and could be encouraged to devise the most suitable cooperative arrangements for the betterment of education in this region.

As from 1st January 1969, the Southeast Asian Ministers of Education Organisation has become formally and permanently established with its juridical personality. The immediate major task that lies ahead will focus on the mobilization of resources both from within the region and from outside Southeast Asia in order to carry out the great undertakings that we in the region have set ourselves.

At this juncture, I shall take the opportunity to call the attention of the Steering Committee to the advisability that, from time to time, it might be necessary to review the scope, direction and magnitude of the programme activities of this particular Regional Centre in order to effectively meet the needs of the region. Another important undertaking by the permanent SEAMEO Organisation lies in the identification and development of new project areas to serve the felt needs of the region. However, in view of the financial commitments incurred by the existing project centres of the Organisation, new project areas will have to be screened with care in order to avoid placing too great a burden on the limited resources of the member countries.

Turning now to the Regional Centre for Education in Science and Mathematics in particular, there are ample reasons to congratulate the Centre for its achievement in surmounting the major problems of institution building. Witness for instance, the initial plan for the development of the centre for the next five years or so. This plan has been well-formulated and accepted at the national and regional levels. Operational activities in the form of professional seminar and academic training as well as innovational research have been undertaken, although these may be somewhat modest in scope and magnitude at this early stage. The funding pattern for the planned period has been underwritten by both the host country, Malaysia, and the principal donor, the U.S. Govt., while a portion of the project cost, defined as Special Funds, has been assigned to the SEAMES Headquarters to raise. The future task for the Centre, broadly speaking, seems to be to make the vision and dreams couched in the projected plan come true. This will involve the construction of physical plant and provision of equipment, and the expansion of the Centre activities in order to make its impact felt at the national and local levels in member countries. The Centre, through the wisdom and guidance of the Steering Committee, may have to take the initiative in making the Regional Centre meaningful at the national level. In some member countries, this may involve the creation of a strong national committee which will coordinate closely with the RECSAM centre in Penang.

Ladies and Gentlemen: before I conclude, may I on behalf of the Southeast Asian Ministers of Education Organisation thank the Government of Japan, through the Ministry of Foreign Affairs, the Japanese National Commission for UNESCO, and the Overseas Technical Cooperation Agency, for graciously consenting to host another meeting of the project centres of the Organisation. The SEAMES Headquarters and the various project centres within its orbit trust that the Government of Japan and the Japanese people will always proffer a friendly and helping hand towards this Southeast Asian movement in educational cooperation. And lastly, let me on behalf of the SEAMES Secretariat wish that the Steering Committee will meet with every success in its deliberations.

APPENDIX 1.C

ADDRESS BY MR. RYOJI ITO
SECRETARY-GENERAL OF THE JAPANESE NATIONAL COMMISSION FOR UNESCO
AT THE OPENING CEREMONY OF
THE FIFTH MEETING OF THE STEERING COMMITTEE OF
THE REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS
IN TOKYO, MARCH 31, 1969.

Mr. Chairman,
Distinguished members of the Committee,
Distinguished guests,
Ladies and gentlemen:

It is a great honour and a real pleasure for me to have this opportunity of greeting you at the opening of the Fifth Meeting of the Steerirg Committee of the Regional Centre for Education in Science and Mathematics, Southeast Asian Ministers of Education Council.

On behalf of the Japanese Ministry of Education and the Japanese National Commission for Unesco, I would like to extend my hearty welcome to the honourable members of the Committee and the distinguished observers who have come all the way from abroad to Japan.

Progress in science and technology promotes economic development and the raising of social standards. The recent accelerating progress in these fields has been revolutionary.

In this connexion, I think, recognition must be give to the extreme importance of training competent researchers and technicians in the fields of basic, developmental and applied science. And it would be essential to meet the need for large numbers of scientists and technicians and to raise the standards of basic academic achievement, particularly in science and mathematics at elementary and secondary education level.

Thus, the importance of science and mathematics education has definitely been recognised.

Concerning this matter, Mr. Rene Maheu, the Director General of UNESCO, expressed, at the opening meeting of the Conference on Application of Science and Technology to the Development of Asia, 1968:

"Science teaching must occupy a central place in the general system of education, and no scheme for reform of curriculum, teacher-training method, examination procedures or school building projects should be undertaken without due consideration of the requirements of science teaching."

In this regard, it is very significant that a SEAMEC Regional Centre for Education in Science and Mathematics has been established in Penang, Malaysia, and also that the 5th Meeting of the Steering Committee is being held here to discuss programmes of the Centre.

Having keen interest in this matter, and wishing for information exchange and closer cooperation among regional countries, the Japanese Government willingly accepted the task of taking care of this important meeting, which had been proposed by Mr. Chang Min Kee and Mr. Ambrose, Chairmen of the RECSAM Steering Committee.

The situation and problems regarding science and mathematics education in Japan is scheduled to be explained by Japanese experts. Taking advantage of this opportunity, I hope you will have a better understanding of the actual conditions of Japan in this field.

I am convinced this meeting will, through friendly discussions and an observation tour of Kansai District, obtain fruitful results. It is my sincere hope that the results of this meeting will contribute towards the future development of science and mathematics education not only in South East Asia, but also in the world.

Here in Japan, the cherry-blossom season is just around the corner. I hope all of you enjoy your stay in Japan.

The Director,
SEAMES,
c/o Educational Planning Office,
Ministry of Education,
BANGKOK, THAILAND.

Dear Dr. Sukich,

SALARY SCALES OF PROFESSIONAL STAFF

At the Fourth Meeting of the Steering Committee held in Bangkok from 7th to 9th November, 1968, the question of paying the professional staff of the Centre according to international salary scales was raised. It was explained by the Chairman of the Steering Committee that using international scales at this stage would increase operational costs to such an extent that it would be difficult to obtain approval from the Malaysian Government to undertake half of the project costs. It was further clarified that there was provision to pay salaries according to international scales to staff recruited from outside the region. Local staff would be seconded on their existing pay with some inducement allowance, while staff recruited from SEAMEC countries would continue to réceive their home salaries as well as topping up allowances of US$500/- per month. The Meeting appreciated that the funding for each project had its own peculiarities but hoped that every effort would be made to maintain standards by getting the best qualified professional staff. It was agreed to raise this matter at the coming Project Directors' Meeting to be held in Chiengmai next week.

In accordance with this decision, I raised this matter up under General at the Third Meeting of the SEAMEC Project Directors/High Officials held in Chiengmai from November 12 to 15, 1968. No definite agreement was reached but you, as Chairman at this meeting, stated that this matter would be noted and brought up at the forthcoming Fourth Conference of SEAMEC that would be held in Djakarta from January 7 to 10, 1969. I note also that this matter has not been included in the Final Report document SEAMES/PDM/3 of the Third Meeting of SEAMEC Project Directors/High Officials.

This matter was not discussed as an item at the Fourth Conference of SEAMEC, though I had mentioned this again in my Progress Report to the Ministers at their Fourth Conference. I wish to raise this once again for your consideration.

> Resolution No. 11 of the Third Conference of SEAMEC states:
>
> "that in order to ensure high quality performance of senior and professional officers of all SEAMEC projects, their remuneration be based on the acceptable international salary scale with appropriate modifications."

However, it is to be noted that the Funding Plan document RCP/A27(7) prepared by the Malaysian Government for the SEAMEC Regional Centre for Science and Mathematics has a modified salary scale paid in accordance with para 29, page 17 of the document RCP/A27(7). An extract ... of this is attached for easy reference.

I wish to seek your views on this matter so that I could inform members of the Steering Committee of the general policy guidelines for salary scales for professional staff.

Yours sincerely,

Sd. xxxxxxx

(J.E.B. Ambrose)
Chairman,
Steering Committee for the Regional
Centre for Education in Science
and Mathematics.

Encl:

EXTRACT OF PAGE 17 PARA. 26 - 29 FROM FUNDING PLAN DOCUMENT RCP/A27(7)

26. Salary Scales for Professional Staff: Resolution 11 of SEAMEC on Funding has recommended that remuneration of senior and professional Officers be based on the acceptable International Salary Scales with appropriate modifications. This resolution will increase the operational costs of the Regional Centre and will constitute a problem more in the case of the other member countries, such as Philippines, Thailand, Vietnam and Indonesia, than in the case of Malaysia and Singapore, which offer perhaps the highest scales in Asia.

27. It should however be pointed out that the problems of the R.E.L.C. are different from those of Malaysia's project dealing with education in Science and Mathematics. In both Singapore and Malaysia, the teaching of English has been well established in our respective educational systems and courses in first and second language teaching have already been well developed in these two countries as well as in the Philippines. As a result of this development there are experienced lecturers in English on the spot which make it possible for the R.E.L.C. project to staff the Centre, if necessary, from its own ranks. In addition, the British Council in Singapore has offered two language experts under the Commonwealth Education Exchange Programme which makes the R.E.L.C. almost self-sufficient by way of staffing.

28. In the case of the Regional Centre for Education in Science and Mathematics, the problems are in a way unique. It is generally accepted that the greatest developments in education in Science and Mathematics have taken place in countries outside the South-East Asian region, particularly in the United States of America, the United Kingdom, Japan and Australia. It is also generally admitted that the teaching of Science and Mathematics in the schools in member countries of this region is still largely done on traditional lines and needs to be oriented towards the latest techniques and modern processes adopted in the developed countries. Because of this, there is an urgent need to orientate the educators in the South-East Asian region to these latest developments in Science and Mathematics if South-East Asia is to benefit from the latest scientific and technological advances of the developed countries. Experts in the various disciplines of Science and Mathematics are however in very short supply in the region and many of them have to be recruited from outside the region. Besides, member countries in the region may not be able to release their experts for long periods for service in the regional Centre. For these various reasons, the staffing of Malaysia's project will have to be not only regional, but also international and professional staff appointed to serve in the Centre must be well qualified and experienced to plan courses to meet the specific needs of the region based on the latest developments in Science and Mathematics.

29. In view of the special circumstances, it is proposed that the staffing of the Regional Centre be made up of three categories:

(a) from Malaysia, a few key professional officers and all the administrative staff. Professional officers should be paid their local salaries plus an inducement allowance of 10% of their salaries. Administrative staff should be paid their local salaries plus normal allowances. Local officers will pay local housing rate, amounting to US$25/- per mensem for quarters supplied by the Regional Centre.

(b) from SEAMES countries, professional officers should be paid their home salaries by the respective member countries and the Regional Centre will offer a topping-up allowance of US$500/- per mensem. Such officers will pay subsidised rents of about US$100/- per mensem for quarters.

(c) from outside the region, professional officers and consultants will be paid the appropriate international salary scales in accordance with Resolution 11 of SEAMES on Funding. These officers will pay the commercial rents for quarters estimated at US$150/- per mensem. On the advice of US.AID authorities in Bangkok, it is estimated that the costs of consultants from the United States of America would be in the region of US$27,000 per year per consultant. A figure of US$18,000 has been used for consultants from the United Kingdom in the preparation of the operational costs of the Regional Centre.

FIFTH MEETING OF THE STEERING COMMITTEE AT TOKYO, JAPAN, FROM 31ST MARCH TO 7TH APRIL, 1969.

Free Publicity for RECSAM through the Good Offices of Mr. Lawrence E. Laybourne of Time Asia, Tokyo.

At the Fourth Meeting of the Steering Committee it was noted by the members (Item 11.1 of R5/SCMS/15) that Time Magazine had expressed interest in publishing articles about the Centre in their magazine.

The Chairman and the Programme Co-ordinator followed this up by calling on Mr. Lawrence E. Laybourne during their visit to Tokyo from 27th November to 9th December 1968 (reference Report RCP/A/24/2 Item 4). Mr. Laybourne recommended that professional assistance be sought from advertising companies in Malaysia to prepare the required publicity article/advertisaments, and gave the names of:-

1. Mr. W. J. Jackson, Advertising Manager of Straits Times, Kuala Lumpur, and
2. Mr. James Peter Chin, Advertising Manager of Dunlop (Malaya) Ltd., P.O. Box 66, Petaling Jaya. (Telephone: 562581)

He informed the Chairman that he would be writing to these two gentlemen about RECSAM and the Centre could then seek their help in obtaining the services of a professional advertiser to voluntarily assist the Centre in putting out a fullpage advertisement.

The Programme Co-ordinator called on Mr. W. R. Jackson, Advertising Manager, Straits Times, Kuala Lumpur, on 16th December 1968. Mr. Jackson was very helpful and arranged for the professional services of Cathay Advertising Ltd. on a voluntarily basis. He further requested that the Programme Co-ordinator brief Mr. W.S. Alexander, Manager Cathay Advertising Ltd., regarding this matter.

The Programme Co-ordinator followed this with a meeting at Cathay Advertising Ltd., Kuala Lumpur, on 17th December 1968. Mr. Alexander very kindly agreed that his firm would be able to undertake the preparation of the full page advertisement about RECSAM and he would have the first draft ready in January 1969. All relevant documents and newsletters of this Centre were later sent to Mr. Alexander.

On 10th February, Cathay Advertising Ltd. presented the first draft of the advertisement. This was modified with certain minor changes at a meeting held at their Office, when the Chairman, Mr. J.E.B. Ambrose, and the Programme Co-ordinator and Mr. R. Rogers RED Liaison Officer, U.S. Embassy, Kuala Lumpur were present. A copy of the revised advertisement is attached .

About 24th February the final version of this draft advertisement was sent by Cathay Advertising Ltd. to Mr. Laybourne in Tokyo.

CATHAY ADVERTISING LTD., KUALA LUMPUR

RECSAM

Time Magazine
Full Page B/W
10th February, 1969.

Illus. (Pic. of subject looking determinedly ahead)

Headline: Abdul Hossein's job is to go
back home to Indonesia
and start up a revolution.

Copy: AT RECSAM, where Hossein was trained, Asians are learning to function as "catalysts", initiating changes in science and mathematics education that will eventually re-structure Southeast Asia as a technologically advanced region.

We do it through people like Hossein, who trains teachers in Bandung. He goes back armed with the latest techniques of imparting an understanding of the processes of Science and Mathematics. So boys and girls in schools throughout Southeast Asia can learn how to apply universal scientific concepts to solving problems in any field - economic, social, political - in their own lives and those of their countries.

But the teaching must be competent and this is what RECSAM is all about. A SEAMEC Regional Centre for Education in Science and Mathematics training Indonesians, Laotians, Malaysians, Philippinos, Singaporeans, South Vietnamese and Thai, RECSAM has programmed a total of seventy courses covering all aspects of science and mathematics education in the first five years. But this will enable us to reach only 5% of the 15 thousand new science and mathematics teachers needed in the region each year.

Help us to reach more Hosseins.

Logo: (RECSAM)

Boldface:

Write today for more information to:
Programme Co-ordinator,
SEAMEC Regional Centre for Education in Science and Mathematics,
c/o Malayan Teachers' College,
Penang, Malaysia.

Base: RECSAM is a regional educational project of the South East Asian Ministers of Education Council (SEAMEC)

APPENDIX 5

SEAMEC REGIONAL CENTRE FOR EDUCATION IN SCIENCE & MATHEMATICS

REVIEW OF CURRENT BUDGET 1ST JULY 1968 - 30TH JUNE 1969

SUMMARY

		Budget 1.7.68 - 30.6.69	Balance as of 1.2.69	Projected Expenditure 1.2.69 - 30.6.69
I.	ADMINISTRATION	US$ 37,260	US$27,579	US$17,400
II.	OFFICE EQUIPMENT	4,270	4,076	5,270
III.	SUPPLIES	6,000	5,854	5,000
IV.	OPERATIONAL EXPENSES	10,000	9,109	7,500
V.	TRAVEL & PER DIEM	5,000	3,586	3,586
VI.	STEERING COMMITTEE & TASK FORCE	16,000	7,570	7,570
VII.	TRAINING DIVISION	30,129	25,477	22,405
VIII.	INFORMATION & CLEARING HOUSE	6,000	5,896	4,750
IX.	FUND RAISING	5,000	2,782	2,782
X.	CONTINGENCIES	5,341	5,341	5,000
		US$125,000	US$97,270	US$81,263

EXPECTED SAVINGS

Current Balance as of 1st Feb. 1969	US$97,270
Project Expenditure 1st Feb. 1969 to 30th June 1969	81,263
SAVINGS -	US$16,007

(please refer to annexure for details)

APPENDIX 5 (Cont'd)

Item 5

SEAMEC REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS

REVIEW OF THE CURRENT BUDGET

1st July 1968 - 30th June 1969
as of 1st February 1969

Project Expenditure to be incurred w.e.f. 1st February, 1969
with proposed new items marked *

I. ADMINISTRATION

Programme Co-ordinator	$600 x 5	=	$3,000	
Training Officer	$500 x 4	=	2,000	
Information Officer	$500 x 4	=	2,000	
Administrative Assistant	$350 x 5	=	1,750	
Secretary	$180 x 5	=	900	
4 Clerks/Typists	$100 x 4 x 5	=	2,000	
Cataloguing Assistant	$ 80 x 5	=	400	
2 Office Keepers/Duplicating Machine Operators	$ 55 x 2 x 5	=	550	
* Consultant Computer Survey			4,800	US$17,400

II. OFFICE EQUIPMENT

1 Typewriter			$ 200	
2 Desks (large)	$160 x 2	=	320	
2 Desks (medium)	$100 x 2	=	200	
2 Desks (small)	$ 75 x 2	=	150	
6 Filing Steel Cabinets	$ 50 x 6	=	300	
4 Book Cases	$100 x 4	=	400	
20 Chairs	$ 10 x 20	=	200	
* 1 Van			3,500	US$ 5,270
			C/Forward -	US$22,670

B/Forward - US$22,670

III. SUPPLIES

Stationery, Paper & Stencils	$400 x 5 =	$2,000	
Reference Books for Training and Research Programmes		3,000	US$ 5,000

IV. OPERATIONAL EXPENSES

Postages	$250 x 5 =	$1,250	
Telephone Calls/Telegrams	$150 x 5 =	750	
* PABX Unit		3,400	
* Rental of new telephone lines		600	
Overtime Allowances		500	
* Subscriptions to periodicals		500	
Contingencies		500	US$ 7,500

V. TRAVEL & PER DIEM

Centre Staff	US$ 3,586

VI. STEERING COMMITTEE & TASK FORCE

Steering Committee Meeting April/May 1969	US$ 7,570

C/Forward - US$46,326

B/Forward -			US$46,326
VII. TRAINING DIVISION			
(i) April 1969			
High School Teachers' Refresher Courses			
Travel 20 participants x 160 =	$3,200		
Stipend 20 " x 75 =	1,500	$ 4,700	
(ii) May - June 1969 - BSCS Adaptation Course			
(a) Participants			
Travel 30 x 160 =	$4,800		
Stipend 30 x 200 =	6,000	$10,800	
(b) Lecturers			
Travel 3 x 350 =	$1,050		
Per Diem 3 x 35 days x16=	1,680		
Fees 3 x 225 =	675	$ 3,405	
(c) Materials		1,500	
(d) Support Services		1,000	
(e) Contingency		1,000	US$22,405
VIII. INFORMATION & CLEARING HOUSE			
Printing of 5000 copies of Newsletters No.4 and No.5		$ 800	
Printing of 1000 copies Development Plan		1,200	
Printing of 3000 copies of Brochure		2,000	
* Purchase of Bibliographical Materials for Information Centre		750	US$ 4,750
IX. FUND RAISING			2,782
X. CONTINGENCIES			5,000
			US$81,263

FUNDING PLAN OF THE REVISED BUDGET

1st July 1969 - 30th June 1970 (in U.S. dollars)

ITEM	INCOME			EXPENDITURE		
I.	Centre Operational Costs (see pages 51, 52 & 53					
	Malaysian Govt. Contribution	85,792				
	U.S. Government Contribution	56,450	142,242	Centre operational Costs (for details see pages 51, 52 & 53		142.242
II.	Special Funds (for details see page 54					
*	SEAMES Contribution (to be obtained by fund raising from prospective donors)	10		1. Training Division Scholarships	47,460	
				2. Research Division Scholarships	18,600	
	U.S. Government Contribution	73,550	73,560	3. Steering Committee Meetings	7,500	73,560
			215,802			215,802

SUMMARY

Contributions

Malaysian Government	85,792
U.S. Government	130,000
SEAMES Fund Raising Sources	10
	215,802

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* Token vote as it is not known for certain how much would be forthcoming from this source.

APPENDIX 6

SEAMEC REGIONAL CENTRE FOR EDUCATION IN SCIENCE & MATHS REVISED BUDGET FOR THE INTERIM CENTRE (NURTURING PERIOD) (1ST JULY 1969 - 30TH JUNE 1970) in U.S.$

I. CENTRE OPERATIONAL COSTS

		Malaysian Govt. Contribution		U.S. Govt. Contribution		US$ Total
1. ADMINISTRATION Staff Salaries						
(i) Professional Staff						
Centre Director (1.1.70 - 30.6.70)	$625 x 6	3,750				
Head of Training Div. (1.1.70 - 30.6.70)	$600 x 6	3,600				
Programme Co-ordinator (1.7.69 - 30.12.69)	$590 x 6			3,540		
Training Officer	$500 x 12			6,000		
Information Officer	$500 x 12			6,000		
			7,350		15,540	22,890
(ii) Consultants						
Planning Consultant US/AID (1 year)				27,000		
Information Consultants US/AID short term (3 - 4 months)				10,000		
Training Div. Consultant US/AID (1 year)				27,000		
One Consultant from U.K. (1 year)		18,000				
One Consultant from U.K. (Primary Science 6 months)		10,000				
			28,000	64,000*		28,000
(iii) Support Staff (Administration)						
Administrative Asst.	$330 x 12			3,960		
Secretary	$170 x 12			2,040		
4 Clerks/Typists	$100 x 12 x 4			4,800		
Cataloguing Asst.	$ 70 x 12			840		
2 Office Keepers/ Duplicating Machine Operators	$ 60 x 12 x 2			1,440		
					13,080	13,080
2. SUPPLIES						
Stationery, Paper & Stencils based on $400 x 12				4,800		
					4,800	4,800
C/F. -			35,350		33,420	68,770

* To be paid separately by US/AID, hence not added here.

			Malaysian Govt. Contribution	U.S. Govt. Contribution		US$ Total
		B/F.	35,350		33,420	68,770
3. OPERATIONAL EXPENSES						
Postages	$200 x 12			2,400		
Telephone/Telegrams	$120 x 12			1,440		
Overtime Allowances				1,000		
Miscellaneous Printing Costs				1,000		
Contingencies				500	6,340	6,340
4. TRAVEL & PER DIEM for Centre Staff						
One trip each to participating member countries/Laos for two persons						
	Fares: $200 x 7 x 2	$2,800				
	P. Diem at five days trip $20 p.d. $20 x 5 x 7 x 2	$1,400		4,200		
Trip to Ceylon (Science & Maths, Project, ARISBR - CAS School Biology)						
Two persons	Fare: $250 x 2	$ 500				
	P. Diem $ 20 x 8 x 2	$ 320		820		
One trip to India, New Delhi/Bangalore for two persons	Fare: $350 x 2	$ 700				
	P. Diem $ 20 x 10 x 2	400		1,100		
Local Travel				1,380	7,500	7,500
5. INFORMATION AND SPECIAL SERVICES DIVISION						
Regional Newsletter & Bulletin Services				4,000		
Science & Math. Education Materials Bulletin				1,000		
Regional Biblio. of Biological Research etc.				1,000	7,000	7,000
6. CONTINGENCIES				2,190	2,190	2,190
		C/F. -	35,350		56,450	91,800

APPENDIX 6 (Cont'd)

		Malaysian Govt. Contribution	U.S. Govt. Contribution	US$ Total
B/F.		35,350	56,450	91,800
7. CONTRIBUTION IN SERVICES AND FACILITIES BY GOVERNMENT OF MALAYSIA				
1. Pro-rated Salaries - Ministry of Education Staff up to 31st December 1970	1,706			
2. Malaysian Government Contribution to Programme Co-ordinator's total salary (only up to 31st December, 1970)	1,530			
3. Supplement to Salaries of Centre Director and Head of Training Division from 1st Jan. 1970 June 1970	1,854			
4. Costs of the Seminar/Observation Courses to be given to 36 students from SEAMEC countries in August. Government/United Kingdom.	5,737			
5. Supporting Services provided by the Malayan Teachers' College, Penang up to 30th June 1970.	2,095			
6. Equivalent Rental Costs of Malayan Teachers' College Buildings and services of a Special Grade Laboratory Attendant loaned to the Regional Centre.	37,520			
		50,442		50,442
Total Centre Operational Costs -		85,792	56,450	142,242

APPENDIX 6 (Cont'd)

[illegible] FOR THE PERIOD

1ST JULY 1969 - 30TH JUNE 1970

[illegible]

Code	Project Title	Participants	Duration & Date	Cost	
	(1) TRAINING				
	(i) Nuffield 'O' Level Science	20	2 weeks Aug. 1969	4,700	
	(ii) Scottish Integrated Science	5	4 weeks Aug. 1969	1,550	
TAG-1	(iii) Seminar for National Administrators	12	1 week Aug. 1969	3,840	
TCE-1	(iv) Modern Methods of Teaching & Evaluation of Gen./Elem. Science	12	6 months Jan.-June 1970	18,680	
TCM-1	(v) Modern Methods of Teaching and Evaluation Primary School Mathematics	12	6 months Jan.-June 1970	18,680	47,450
	(2) RESEARCH				
RAG-1	(i) Admin. Techniques for Project Implementation	12	3 months Aug.-Oct. 1969	11,280	
RAG-2	(ii) Science & Maths Requirements Analysis	12	4 weeks Aug. 1969	3,600	
RCP-1	(iii) Dev. of Physics Prototype Syllabus Pilot Study	6	1 month Jan. 1970	1,860	
	(iv) Dev. of Chemistry Prototype Syllabus Pilot Study	6	1 month Jan. 1970	1,860	18,600
	(3) STEERING COMMITTEE MEETINGS		Vietnam/ Singapore Oct. 1969 Malaysia April, 1970	7,500	7,500
			TOTAL SPECIAL FUNDS		73,550

Appendix 7

Report of Visit to Tokyo, Osaka and Kyoto by Mr. J.E.B. Ambrose, Chairman Steering Committee, and Mr. C. Ganasalingam, Programme Co-ordinator (Nov. 27 - Dec. 9, 1968)

I. INTRODUCTION:

At the Fourth Meeting of the Steering Committee, SEAMEC Regional Centre for Education in Science and Mathematics, it was agreed that the Fifth Meeting of the Steering Committee should be held in Tokyo in April 1969 because of the following advantages:

(a) it would provide an opportunity for a really professional meeting by enabling members to have the benefit of meeting and having discussions with the top Japanese experts in the field of Science and Mathematics education;

(b) there were good prospects of obtaining assistance from the Japanese Government;

(c) it would enable members to have an idea of the nature of basic Science equipment and more advanced equipment available in Japan at relatively low cost.

II. DISCUSSIONS HELD AT THE JAPANESE NATIONAL COMMISSION FOR UNESCO ON THURSDAY, 28TH NOVEMBER 1968 AT 10.00 A.M.

PRESENT:

1. Mr. Ryoji Ito, Secretary-General, Japanese National Commission for UNESCO.
2. Mr. J.E.B. Ambrose, Chairman, Steering Committee, SEAMES Regional Centre for Education in Science and Mathematics, Ministry of Education, Kuala Lumpur, Malaysia.
3. Mr. Hideo Ohashi, Inspector, Elementary and Secondary Education Bureau, Ministry of Education.
4. Mr. Taichi Sasaoka, Chief, Education Section, Japanese National Commission for UNESCO.
5. Mr. Motofumi Kato, Deputy Chief, Education Section, Japanese National Commission for UNESCO.
6. Mr. Nobuyuki Morihisa, Inspector of Science Textbooks Section, Primary and Secondary Education Bureau, Ministry of Education.

7. Mr. C. Ganasalingam, Programme Co-ordinator, SEAMES Regional Centre for Education in Science and Mathematics, Penang, Malaysia.

Mr. Ryoji Ito welcomed RECSAM representatives on behalf of the Japanese National Commission for UNESCO.

The following points were discussed:

1. Date of Proposed Meeting:

Tentative dates 31st March - 7th April, 1969.

2. Meeting Place:

National Education Centre, Kasumigaseki, Chiyoda-ku, Tokyo.

3. Participants:

A list showing the names of delegates and observers who attended the Fourth Meeting of the Steering Committee at Bangkok from November 7 - 9, 1968, was given to Mr. Ito. In addition, it was suggested that the following Ministries and organisations be invited to send observers:

(i) Ministry of Foreign Affairs.
(ii) Ministry of Education.
(iii) UNESCO and UNDP, Japan.
(iv) National Institute for Educational Research, Japan.
(v) Asia Foundation, Japan.
(vi) Ford Foundation, Japan, Tokyo Science Education Centre.
(vii) National Science Foundation, Tokyo, c/o U.S. Embassy, Tokyo.
(viii) Japanese National Commission for UNESCO.
(ix) Overseas Technical Corporation Agency (OTCA).
(x) S.E.A. Studies Group of Osaka State University.
(xi) S.E.A. Studies Group of Kyoto University.

(xii) Indonesian Embassy, Tokyo.)
(xiii) Malaysian Embassy, Tokyo.)

(xiv) Philippines Embassy, Tokyo.)
(xv) Singapore Embassy, Tokyo.)
(xvi) Thailand Embassy, Tokyo.)
(xvii) Vietnamese Embassy, Tokyo.)

4. Programme and Costs

A tentative programme for the RECSAM Steering Committee meeting (March 31 - April 7, 1969) was worked out and is shown in annexure I.

A financial estimate of the meeting costs excluding international travel and per diem is included in annexure II.

5. Accommodation, Transportation, Equipment and Stationery:

This would be the responsibility of the Organising Committee headed by Mr. Taichi Sasaoka as Chairman and Mr. Motofumi Kato as Vice-Chairman. They agreed to work out an estimate of the costs of different items of expenditure for the meeting.

6. Arrangements for the Meeting:

1 large room and 1 room for Secretariat and duplicating facilities had tentatively been reserved at the National Education Centre. In addition, one small room would be made available for the Chairman, Steering Committee.

It was also agreed that -

(i) Hotel accommodation for 14 has been provisionally reserved at Hotel Takanawa Prince near the National Education Centre -

8 Twin Rooms -- ¥3,800 - 4,000 with tax.
2 Single Rooms -- ¥2,800 - 3,200 " "

(ii) A request to Science Equipment Manufacturing firms for holding an Equipment Exhibition would be discussed by 8 firms on December 18 and a decision would be conveyed to the Organising Chairman.

The venue of the exhibition would most likely be at the Tokyo Education Centre.

7. Secretariat Assistants and Support:

2 typists, 1 tape-recorder operator and 1 duplicating machine operator would be required for the meeting arranged.

8. It was agreed that another meeting would be held on November 29, Friday afternoon.

9. Financial Estimate for holding the Fifth Meeting of the SEAMEC Regional Centre for Education in Science and Mathematics from March 31 to April 7, 1969:

For details, please see Annexure I.

III. MEETING WITH DR. RICHARD REIS, NATIONAL SCIENCE FOUNDATION (N.S.F.), TOKYO, ON 29TH NOVEMBER, 1968, AT 10.30 A.M.

The following points were discussed:

1. Possible Assistance from N.S.F.:

This was envisaged in the near future in the form of consultant support for some of the programmes of the Centre; assistance to staff of the Centre to attend some of the N.S.F. courses in U.S.A. and providing free gifts of materials prepared in N.S.F. assisted projects.

2. Science Centres in Japan:

Dr. Reis gave a copy of the Conference on College Biology conducted by the U.S. - Japan Co-operative Science Programme 16 - 21 January 1967. He also agreed to give some suggested guide-lines on the formation of Science Centres in participating member countries based on his own experience and that of American Science educators who have visited the Science Centres in Japan from time to time.

3. Manpower Survey Needs:

The N.S.F. in USA has carried out and is still conducting the survey of manpower needs of Science talent in industry and other sectors. Mr. Ambrose informed Dr. Reis that the Centre was proposing to carry out a survey in the region soon and that one of the proposed programmes at the Centre involved a survey of Science and Mathematics talent requirements in the region. Dr. Reis agreed to provide the Centre with some background material based on N.S.F. surveys of manpower needs in U.S.A. for use by the Centre.

IV. MEETING WITH MR. LAWRENCE E. LAYBOURNE, TIME INCORPORATED, TOKYO ON 29TH NOVEMBER, 1968, AT 4.00 P.M.

Mr. Laybourne was pleased about our visit. He explained that he had visited Penang during our absence and had also met SEAMES Director, Mr. Sukich, in Bangkok.

Subject: Free Publicity for the Centre in Time Asia Edition:

Mr. Laybourne suggested that professional assistance be sought from advertising companies and gave the names of -

1. Mr. W.J. Jackson, Advertising Manager of Straits Times, Kuala Lumpur, and

2. Mr. James Peter Chin, Advertising Manager of Dunlop (Malaya) Ltd., P.O. Box 66, Petaling Jaya. (Telephone: 562581)

He would be writing to these two gentlemen about the Science and Mathematics Centre and the Centre could then seek their help in obtaining the services of a professional advertiser to voluntarily help the Centre in putting out a full page advertisement.

Mr. Laybourne also suggested that we call on Mr. Robert S. Smith, P.R. Director of A.I.T. at Bangkok on our way back from Tokyo. The morning of 9th December was suggested tentatively. Mr. Laybourne would be writing to Mr. Smith regarding this.

V. MEETING WITH OVERSEAS TECHNICAL CO-OPERATION AGENCY (O.T.C.A.) OFFICIALS AT O.T.C.A. BUILDING ON 30TH NOVEMBER, 1968, AT 10.00 A.M.

Two discussions were held -

1. in the External Operations Division with the Deputy to Mr. Miyamoto, Mr. Takei, and

2. in the Internal Operations Division with Mr. Hori.

After giving a short account of RECSAM, its organisation and proposed activities, Mr. Ambrose explained the purpose of our visit to O.T.C.A. -

a. To seek assistance from O.T.C.A. in the way of a contribution to part of the costs of the Fifth Steering Committee Meeting, for example, the rental costs of the venue of the meeting at National Education Centre and part of the local travel costs of members between Tokyo and Osaka, Kyoto, Nagoya and back.

b. To seek assistance from O.T.C.A. e.g. possible donation of Science equipment to the Centre by Manufacturers of Science Equipment.

Mr. Takei (Mr. Miyamoto's Deputy) explained one aspect of O.T.C.A.'s overseas activities - science Education Co-operation which could take any or all of the following forms:

(i) Assignment of Japanese experts and the donation of Science equipment mainly for the purpose of in-service training of Science teachers at the level of secondary education.

(ii) Offering training fellowships to overseas students to study in Japan.

(iii) Providing Japan Overseas Co-operation Volunteers.

Under Regional Co-operation, O.T.C.A. is assisting in the setting up of the South-East Asian Fishery Development Centre with the Training Division located near Bangkok and the Research Division located in Singapore.

Under O.T.C.A.'s activities in Malaysia, two experts in Science Education, Mr. Shigeharu Funamoto and Mr. Nobuyuki Morihisa have been sent to Malaysia and a donation of Science equipment worth about US$4,000 has been made. MARA has been given the services of two experts, Mr. Kamazakie and Mr. Moritomo, to develop cottage industries. F.I.D.A. has requested the services of a Basic Research Economic Planner.

He explained that O.T.C.A. could only offer assistance on a bilateral basis of Malaysia at the request of Malaysia under the Colombo Plan Scheme. It has not had dealings with a regional organisation on a multilateral basis. A meeting was also arranged with the chief of the Internal Operations Division, Mr. Hisayasu Hori. Mr. Ambrose suggested that the following could be considered as possible items of assistance by O.T.C.A. including financial assistance for the fifth meeting in respect of -

(i) the free rental costs of meeting place;

(ii) the costs of internal transport for the participants and if possible for observers;

(iii) to arrange an exhibition of Science equipment by Japanese manufacturers of Science equipment and a donation of these exhibits after the exhibition to the Regional Centre;

(iv) to arrange for donation of Science equipment, teaching aids, textbooks, reference books, audio-visual aids;

(v) provision of Japanese Consultant or experts;

(vi) training awards to staff and nominees from the Regional Centre.

If it is not possible for O.T.C.A. to solely provide assistance of the type requested for any or all of the items described above, then O.T.C.A. could consider the possibility of doing this jointly or in collaboration with the Japanese National Commission of UNESCO.

Mr. Hori explained that this matter would have to be brought up at the meeting of the Directors of O.T.C.A. and that he would do his best to help RECSAM.

VI. MEETING AT NATIONAL INSTITUTE FOR EDUCATIONAL RESEARCH (N.I.E.R.) ON MONDAY, 2ND DECEMBER, 1968:

Discussions were held with:

1. Mr. Tetsuro Kon, Director of External Services Department.
2. Dr. Kihei Koizumi, Head of the Centre for Educational Studies in Asia.
3. Mr. A. Iijima, Director of Research Dept. IV.

Mr. Ambrose explained the purpose of visit to N.I.E.R. was to seek possible assistance and co-operation with RECSAM. Dr. Koizumi mentioned that there was the possiblility of several areas of co-operation in Science and Mathematics with materials and consultant support. N.I.E.R. had completed the International Project for the Evaluation of Educational Achievement (IEA Project), Mathematics 1967 under the UNESCO-NIER Regional Programme for Educational Research in Asia. The Educational Research Workshop on Mathematics Teaching for Primary Level Education in Asia was held from 14th Oct. to 16th November, 1968, and N.I.E.R. was planning a similar IEA Project in Science in which RECSAM would be able to participate fully. The possibility of holding a joint UNESCO-SEAMEC - N.I.E.R. could be considered and studied carefully for the future conference in Science Education. It was also suggested by Mr. Ambrose that lecturers for seminar discussions in Mathematics and Science could be recommended by N.I.E.R. for the seminar which would be held during the meeting of the Steering Committee in Japan in April 1969.

It was mutually agreed that the Project Office of RECSAM would write to Dr. Hiratsuka, Director-General of N.I.E.R. to suggest a name of a prominent Japanese Science/Maths Educator to serve in an honorary capacity in the International Advisory Council for RECSAM. It was also agreed that documents pertaining to Science and Mathematics in the region would be exchanged with N.I.E.R.

VII. DISCUSSIONS WITH MR. S. FUTAGAMI, CHIEF SCHOOL CO-ORDINATOR BROADCASTS JAPAN ON 2ND DECEMBER, 1968, AT 3.00 P.M.

Broadcasting Corporation (N.H.K.)

Discussions were held on E.T.V. lessons: How these are produced.

How effective they are and methods of evaluation.

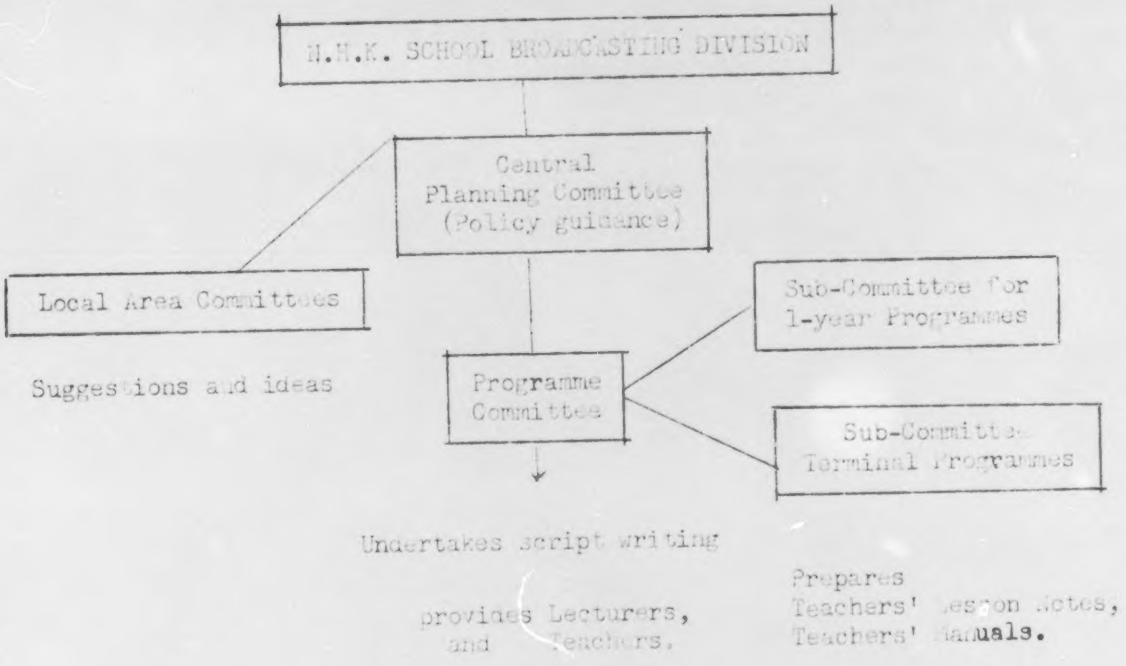
A visit was also made to the Studios.

Mr. Futagami explained that

(i) N.H.K. had a catalogue of films on Science suitable for use in classrooms.

(ii) N.H.K. undertakes about 36 different School Broadcasts and some Education Programmes for adults.

He further described how School Broadcasts are planned by N.H.K. with the help of an organisation as set out below:


N.H.K. SCHOOL BROADCASTING DIVISION
Central Planning Committee (Policy guidance)
Local Area Committees
Suggestions and ideas
Programme Committee
Sub-Committee for 1-year Programmes
Sub-Committee Terminal Programmes
Undertakes script writing
provides Lecturers, and Teachers.
Prepares Teachers' Lesson Notes, Teachers' Manuals.

VIII. SECOND MEETING WITH MR. HISAYASU HORI, CHIEF OF INTERNAL OPERATIONS DIVISION, OVERSEAS TECHNICAL CO-OPERATION AGENCY (OTCA)

On Wednesday, 4th Dec. 1968.
10.00 a.m. - 12.15 p.m.

Also present during the meeting were

Mr. Masao Hasegawa, Chief of Administrative Section, Internal Operations Division.

Mr. Uhera, Chief of Overseas Training Centres and

Mr. Nobuyuki Morihisa, Inspector of Science Textbooks formerly Colombo Plan Expert on Science Education in Malaysia.

Further discussions were held on possible areas co-operation and assistance from O.T.C.A.

Mr. Hori explained that he had considered the possibility of different items of assistance that O.T.C.A. could give to RECSAM since the first meeting held on Friday, 30th November 1968. He reiterated that the bilateral assistance was the only feasible source of assistance which O.T.C.A. could give the Centre. This would have to be in the form of Colombo Plan Scholarships for participants who would have to complete A2 & A3 forms. O.T.C.A. could not have multi-lateral arrangements under its present charter.

Mr. Ambrose pointed out that in view of the seniority of many of the officials concerned, this filling of A2 and A3 forms might not be acceptable to the Steering Committee members and suggested that senior fellowships could be considered under Colombo Plan as in the case of a Science seminar held in New Zealand a few years ago.

Mr. Hori further explained that the possibility of local hospitality to participants to the fifth meeting could be provided without much difficulty in another form i.e. through International Cultural Relations Division. He suggested that the Director, SEAMES writes an official letter to the Ministry of Foreign Affairs, Japan, regarding the meeting so that the necessary formal arrangements could be made for this form of assistance.

Regarding aid to the Centre, the following points were discussed and noted for possible future action:

(i) Providing Science and Mathematics education experts under Colombo Plan assistance to Malaysia;

(ii) Provision of Science equipment also under Colombo Plan;

(iii) Training of local counterparts to Japanese experts in Japan in the field of Science education and in the manufacture of prototype basic science equipment in schools.

(iv) the possibility of starting an overseas centre for the production of prototype science equipment using locally available materials. (This could be a national programme for Malaysia or be considered under a regional programme for RECSAM).

IX. FINAL MEETING WITH MR. RYOJI-ITO, SECRETARY-GENERAL, ON 4TH DECEMBER 1968 AT 3.00 P.M.

PRESENT:

Mr. Ryo-Ito, Secretary-General, Japanese National
Commission for UNESCO.

Mr. J.E.B. Ambrose, Chairman, Steering Committee RECSAM.

Mr. Taichi Sasaoka.

Mr. Motopumi Kato.

Mr. C. Ganasalingam

Before going on to the report of the first meeting, Mr. Ito explained that he has had further discussions with officials of the Ministry of Education, the Japanese National Commission for UNESCO, the Overseas Technical Corporation Agency on the holding of the Fifth Meeting of the Steering Committee in Japan. He indicated that there was fair possibility of holding the proposed meeting of the Steering Committee as the Japanese National Commission for UNESCO was willing to assist and also make the necessary arrangements for the meeting and that O.T.C.A. was also willing to co-operate in this matter. Mr. Ito further explained that it was preferable, however, that an official letter be written regarding the hosting of the Steering Committee Meeting. He suggested that an official approach be made to the Japanese Government through the Ministry of Foreign Affairs, Japan, regarding the holding of the Fifth Meeting of the Steering Committee of RECSAM in Tokyo, Japan, with the following main points:-

(i) that some reference to UNESCO Headquarters in Paris being interested in the RECSAM project be indicated in the letter.

(ii) Informal copies of this letter which would be written by the Director SEAMES to Ministry of Foreign Affiars, Japan could be extended to the Secretary-General, Japanese National Commission for UNESCO and to O.T.C.A.

The minutes of the meeting held on 28th November were reviewed and confirmed subject to the above

X. VISIT TO TOKYO METROPOLITAN EDUCATION INSTITUTE FOR EDUCATIONAL RESEARCH AND IN-SERVICE TRAINING:

TUESDAY, 3RD DECEMBER - 2.00 P.M.

Dr. Morikawa showed RECSAM officials the Institute.

The Institute has an excellent building and conducts in-service courses for teachers from the Metropolitan area of Tokyo in all fields of education. Research is carried on in some selected areas including Science and Mathematics.

The Science Division:

This is a fairly large division having Biology, Chemistry, Physics, Earth Science (Geology), Mathematics and Astronomy. About 1,000 teachers come for in-service training. About 20 for a 1-year programme. Most courses are for 3 to 10 days. The main areas covered are in Elementary Science, General Science for Junior High School teachers. It has well equipped laboratories including closed circuit television facilities and a planetarium.

XI. DISCUSSIONS WITH OSAKA CITY UNIVERSITY SOUTHEAST ASIAN STUDIES CENTRE OFFICIALS:

THURSDAY, 5TH DECEMBER - 2.30 P.M.

PRESENT:

Dr. Watase - President, Osaka City University.

Dr. Muramatsu - Prof. of Human Geography

Dr. Ichikawa - Prof. of Geology

Dr. Yoshikawa - Botany Division

Mr. Ambrose explained the purpose of the visit and outlined the organisation of SEAMEC, the scope, functions and proposed activities of RECSAM.

Dr. Watase thanked RECSAM officials for the visit and assured them of the willingness of Osaka City University South-East Asian Studies Centre to co-operate with RECSAM in its activities.

XII. VISIT TO THE OSAKA SCIENCE EDUCATION CENTRE:

FRIDAY, 6TH DECEMBER - 10.00 A.M.

Dr. Gentara Kuse, Associate Director, explained the activities of the Centre. Questions were asked about the courses and the number of participants attending these.

Dr. Kuse explained that his Centre was only conducting courses to improve the content knowledge of participants and not concerned with the teaching syllabus. That was a matter for the Ministry of Education. He felt that if a teacher was sound in his knowledge of subject matter he could teach the syllabus in the best method possible.

Dr. Kuse agreed to exchange information and ideas with RECSAM.

XIII. DISCUSSIONS WITH KYOTO UNIVERSITY SOUTH-EAST ASIAN STUDIES CENTRE OFFICIALS:

SATURDAY, 7TH DECEMBER - 10.00 A.M.

PRESENT:

Dr. K. Kawaguchi, Professor of Soil Science
(representing Dr. Sagara, Head of the
S.E.A. Group)

Dr. K. Kyuma, Associate Professor of Soil Science.

Mr. J.E.B. Ambrose explained the purpose of the visit and outlined the organisation of SEAMEC, the scope, functions and proposed activities of RECSAM.

Dr. Kawaguchi assured RECSAM officials of the keeness of Kyoto University South-East Asian Studies Group to co-operate with RECSAM in its activities and also with other SEAMEC projects.

XIV. VISIT TO THE SHIMADZU SCIENCE EQUIPMENT DIVISION:

SATURDAY, 7TH DECEMBER - 11.00 A.M.

RECSAM officials were received by Mr. Masao Inoue, Head of the Division of Science Equipment of Shimadzu and introduced to Mr. Toshio Kitano, Demonstrator of Science Equipment.

RECSAM officials were shown a series of slides explaining the organisation and activities of Shimadzu and later taken round an exhibition of science equipment. Demonstrations of the "Answer Checker" and other Physics equipment were carried out by Mr. Kitano. A wide range of equipment of simple design that could easily be used for the improvement of teaching science in schools was exhibited.

Mr. Inoue agreed that a much wider range of apparatus including Biology and Chemistry science equipment would be displayed for the visit of the Steering Committee members in April, 1969.

XV. MEETING WITH SEAMES DIRECTOR AT BANGKOK, THAILAND.

MONDAY - 9TH DECEMBER, 1968.

RECSAM officials called on Mr. Sukich Nimmanheminda, Director of SEAMES, at the Ministry of Education, Bangkok on their return from Japan.

Mr. J.E.B. Ambrose briefed the Director of SEAMES on the visit to Japan and discussed the formalities of official request and the various arrangements necessary for holding the Fifth Meeting of the Steering Committee in Japan in April 1969. The Director of SEAMES assured RECSAM officials that he would give his full co-operation in this matter.

J. E. B. Ambrose

C. Ganasalingam

26th December, 1968.

Tentative Programme for SEAMES Steering Committee Meeting
(March 31 - April 7, 1969.)
Tokyo, Japan.

March 31 (Monday):

8.30 - 9.30	Registration.
10.00 -	Opening Ceremony.
10.30 -	Coffee Break
11.00 - 12.30	Plenary Session I
14.00 - 17.00	Plenary Session II

April 1 (Tuesday):

9.00 -	Plenary Session III
12.30 -	Lunch
14.00 - 16.00	National Broadcasting Corporation, Japan.
16.30 - 18.00	Plenary Session IV.

April 2 (Wednesday):

9.00 -	Plenary Session V.
12.30 -	Lunch
14.00 - 16.00	Visit to the Science Division, Tokyo Metropolitan Institute for Educational Research and In-Service Training.
16.30 -	Plenary Session VI.

April 3 (Thursday):

8.40 -	Leave Tokyo for Osaka by "Bullet" Express.
11.50 -	Arrive in Osaka
12.30 -	Lunch
13.30 -	Visit to Osaka Prefectural Science Education Centre (Karita Yonchome, Sumiyoshi-ku, Osaka).
15.30 -	Visit to South-East Asian Studies Centre, Osaka City University.
Evening	Stay in Osaka.

April 4 (Friday):

9.30 -	Leave Osaka for Kyoto.
9.30 -	Visit to South-East Asian Studies Centre, Kyoto University.
11.00 -	Visit to Shimadzu Science Equipment Division Factory.
Afternoon	Sightseeing.
Evening	Leave Kyoto for Nagoya. Stay in Nagoya.

April 5 (Saturday):

9.00 -	Visit to Yagami Science Equipment Manufacturing Company.
12.00 -	Leave Nagoya for Tokyo.
14.10 -	Arrive in Tokyo. Visit to observe Business Centre of Tokyo.

April 6 (Sunday):

10.00 - 12.30	Lecture and discussion on Science Education in Japan.
12.30 -	Lunch
14.00 - 16.30	Lecture and discussion on Mathematics Education in Japan.

April 7 (Monday):

Morning	Preparation of Draft Final Report.
14.30 -	Adoption of Final Report.
	Press Communique.
16.30 -	Closing Session.

FINANCIAL ESTIMATE FOR HOLDING THE FIFTH MEETING OF THE SEAMEC REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS, MARCH 31 - APRIL 7, 1969.

I. MEETING ROOM:

1.	Part-time clerk's fees 2 persons x 7 days x Y2,500		Y 35,000
2.	Typist's fees 2 persons x 7 days x Y2,500		Y 35,000
3.	Part-time Attendant and Office Boys 2 persons x 7 days x Y1,500		Y 10,500
4.	Rent for Meeting Room, 6 days	Y61,200	
5.	Rent for Office Room	Y61,200	
6.	Rent for small room for duplicating	Y16,800	Y139,200
7.	Office Supplies		Y 10,000
8.	Tape Recorder Operator's fees 1 person x 4.5 days x Y2,000		Y 9,000

II. REFRESHMENTS, COFFEE BREAK, ETC.

	9 x Y1,800		Y 16,200

III. TRANSPORTATION:

1.	Rent for Bus - Visit to N.H.K. and Tokyo Science Education Centre		Y 20,000
2.	Taxi (Hotel - National Education Centre) 6 x 9 times x Y300		Y 16,000
3.	Limousine Service from Airport to Hotel 16 x Y960		Y 17,280
4.	Local Travel costs Tokyo-Osaka-Kyoto-Nagoya-Tokyo for 16 persons x Y6,860	Y109,760	
5.	Rent for Buses at Osaka, Kyoto, Nagoya for 3 x Y20,000	Y 60,000	Y169,760

IV. RECEPTION BY CHAIRMAN, STEERING COMMITTEE:

	60 persons x Y1,400		Y 84,000
		Total:	Y591,940
		+ Contingency:	Y 8,060
		GRAND TOTAL:	Y600,000
		GRAND TOTAL approx. US$	1,700

PROGRAMME OF VISITS TO TOKYO, OSAKA, KYOTO, BY MR. J.E.B. AMBROSE, CHAIRMAN, STEERING COMMITTEE, AND MR. C. GANASALINGAM, PROGRAMME CO-ORDINATOR, RECSAM DURING THE PERIOD WEDNESDAY, 27TH NOVEMBER - 7TH DECEMBER, 1968.

Wednesday, 27th November.	Left Kuala Lumpur by CX574. Arrived at Tokyo at 9.30 p.m.	
	9.10 a.m.	Met by Mr. Nagahama, Japanese National Commission UNESCO Official and Mr. M. Morihiasa, Ministry of Education Official.
	Hotel K[illegible]ai Kanko.	
Thursday, 28th November.	10 [illegible]	[illegible]ing with Mr. Ryoji Ito and officials of the Japanese National Commission for UNESCO.
	1.00 p.m.	Meeting with Mr. Ryoji Ito and officials of the Japanese National Commission for UNESCO.
Friday, 29th November.	10.00 a.m.	Meeting with the Organising Committee for Fifth Steering Committee Meeting in Tokyo and discussions held with members of the Organising Committee, Dr. Dutton, Regional Development Officer, U.S. Embassy and Dr. Jacobs.
	2.00 p.m.	Second Meeting with members of the Organising Committee.
	4.00 p.m.	Meeting with Mr. Lawerence E. Laybourne, Time Incorporated, Tokyo.
Saturday, 30th November.	10.00 p.m.	Meeting with officials of Overseas Technical Corporation Agency, Japan.
		Mr. Takai, Assistant in the External Operations Division.
		Mr. Hori, Chief of the Internal Operations Division.

Saturday Afternoon Sunday		Visit to Hakone.
Monday, 2nd December.	10.00 a.m.	Meeting with National Institute for Educational Research (N.I.E.R.) Mr. Tetsuro Kon, Director of External Services Department. Dr. Kihei Koigumi, Head of the Centre for Educational Studies in Asia. Dr. A. Iijima, Director of Research, Department IV.
	1.00 p.m.	Visit to National Broadcasting Corporation, Japan, N.H.K. Mr. S. Futagami Chief of Co-ordinator of School Broadcasts, Tokyo Internal Centre.
Tuesday, 3rd December.	10.00 a.m.	Third Meeting with members of the Organising Committee in Japanese National Commission for UNESCO.
	11.00 a.m.	Meeting with Ministry of Education Officials. Mr. Morihisa, Inspector of School Science Textbooks.
	2.00 p.m.	Visit to the Tokyo Metropolitan Education Division.
Wednesday, 4th December.	10.00 a.m.	Second Meeting with O.T.C.A. Officials. Mr. Hisayasu Mori, Chief of Internal Operations Division. Mr. Uehara, Chief of Overseas Training Centre. Mr. Masao Hasegawa, Chief of Administrative Section.
	3.00 p.m.	Meeting with the International Cultural Affairs Division of the Ministry of Education.
	3.30 p.m.	Final Meeting with Mr. Ryoji Ito and Organising Committee in

		Japanese National Commission for UNESCO.
		Hotel Koksai Kanko.
Thursday, 5th December.	10.00 a.m.	Depart Tokyo for Osaka.
	11.15 a.m.	Arrival at Osaka and met by Dr. K. Yoshikawa, Department of Biology, Osaka City University, Osaka.
		Research Institute for Microbiological Diseases. Dr. Inoki, Head of the Parasitology Division. Lunch with C.C.B. delegates.
	2.30 p.m.	Osaka City University S.E.A. Studies Committee. Dr. Muramatsu, Human Geography. Dr. Ichikawa, Geology.
Friday, 6th December.	10.00 a.m.	Osaka Science Education Centre. Dr. Gentara Kuse, Associate Director, Science Education Centre.
	2.00 p.m.	Osaka University Medical School S.E. Asian Studies Centre.
Saturday, 7th December.	9.00 a.m.	Leave for Kyoto.
	10.00 a.m.	Kyoto University S.E. Asian Studies Centre. Dr. K. Kawaguchi, Director of Agriculture, Professor of Soil Science. Dr. Kazutake Kyuma, Associate Professor of Soil Science.
	11.00 a.m.	Visit to Shimadzu Science Equipment Centre. Mr. Masao Inoue, Head, Division of Science Equipment. Mr. Toshio Kitano, Demonstrator of Science Equipment.
	6.55 p.m.	Depart Osaka, JAL703 for Hongkong.

Sunday, 8th December,	4.00 p.m.	Hongkong. Depart Hongkong for Bangkok.
Monday, 9th December.	10.00 a.m.)) 2.00 p.m.)	Meeting with SEAMES Director.
	6.00 p.m.	Depart Bangkok for Kuala Lumpur.

PERSONS CONTACTED BY MR. J.E.B. AMBROSE AND MR. C. GANASALINGAM DURING VISIT TO TOKYO AND JAPAN

(Wednesday 29th November - Saturday 7th December, 1968)

I. JAPANESE NATIONAL COMMISSION FOR UNESCO:

Ministry of Education,
Kasumigaseki, Chiyoda-ku,
Tokyo.

1. Mr. Ryoji Ito, Secretary-General.
2. Mr. Taichi Sasaoka, Chief, Education Section.
3. Mr. Nofofumi Kato, Deputy Chief, Education Section.

II. MINISTRY OF EDUCATION:

Kasumigaseki,
Chiyoduku,
Tokyo.

4. Mr. Hideo Ohashi Science Inspector, Elementary and Secondary Education Bureau.
5. Mr. Nobuyuki Morihisa, Inspector of Science Textbooks Section, Primary and Secondary Education Bureau.
6. Mr. Kohei Shinozawa, Chief of International Cultural Relations Section. Agency for Cultural Affairs.

III. U.S. EMBASSY, TOKYO:

2, Aoi-Cho,
Akasaka,
Minato-ku, Tokyo.

7. Mr. Dutton, Regional Development Office.
8. Dr. Richard R. Ries, Deputy Head of National Science Foundation, Tokyo.

IV. TIME-LIFE INCORPORATED TOKYO:

Asahi Building, 3, 6-Chome,
Ginza Nishi, Chuo-ku, Japan.

9. Mr. Lawrence E. Laybourne, Asia Edition Managing Director.

V. OVERSEAS TECHNICAL CORPORATION AGENCY, MINISTRY OF FOREIGN AFFAIRS, JAPAN:

Economic Co-operation Center Building,
42 Honmura-Cho, Ichigaya,
Shinjuku, Tokyo.

10. Mr. Hisagasu Hori, Chief of Internal Operations Division.
11. Mr. Masao Hasegawa, Chief of Administrative Section, Internal Operations Division.
12. Mr. Haruo Suzuki, Training Officer, Internal Operations Division.
13. Mr. Uehera, Chief of Overseas Training Centres.
14. Mr. M. Fukushima, Second Training Section, Internal Operations Division.
15. Mr. Takei, Deputy Chief of External Operations Division.

VI. NATIONAL INSTITUTE FOR EDUCATIONAL RESEARCH (N.I.E.R.)

6-5-22 Shimomguro,
Meguroku,
Tokyo.

16. Mr. Tetsuro Kon, Director, External Service Department.
17. Dr. K. Koizumi, Head of the Centre for Education Studies in Asia.
18. Dr. A. Iijima, Director, Research Department IV Primary and Secondary Curricula.

VII. JAPAN BROADCASTING CORPORATION (N.H.K.):

Jin-Nan-Cho,
Shibyua-ku,
Tokyo.

19. Mr. Shigenari Futagami, Chief Co-ordinator School Broadcasting Division.

VIII. TOKYO METROPOLITAN EDUCATION INSTITUTE FOR EDUCATIONAL RESEARCH AND IN-SERVICE TRAINING:

1-14, 1-Chome,
Meguro, Tokyo.

20. Mr. Dai Mori, Director.
21. Dr. Hisao Morikawa, Chief Division of Science.

IX. RESEARCH INSTITUTE FOR MICROBIAL DISEASES, OSAKA UNIVERSITY:

Yamada-kami,
Suita,
Osaka, Japan.

22. Dr. Shozo Inoki.

X. OSAKA CITY UNIVERSITY (SOUTH-EAST ASIAN STUDIES):

Sugomoto,
Sumiyoshiku,
Osaka, Japan.

23. Dr. Yuzuru Watase, President.
24. Dr. Koichiro Ichikawa, Professor of Geology.
25. Dr. K. Yoshikawa, Department of Biology.
26. Dr. Muramatsu, Professor of Human Geography.

XI. OSAKA SCIENCE EDUCATION INSTITUTE:

Science Education,
Institute of Osaka Prefecture,
Sumigoshiku,
Osaka.

27. Dr. Gentaro Kuse, Associate Director.
28. Miss Reiko Naotsuka, Instructor, English Section.

XII. OSAKA UNIVERSITY MEDICAL SCHOOL:

Hukusima,
Osaka, Japan.

29. Dr. Ymichi Yamamura, Dean.
30. Dr. Syotaro Mizuno, Director, Department of Orthopaedic Surgery.

XIII. KYOTO UNIVERSITY (SOUTH-EAST ASIAN STUDIES CENTRE):

Faculty of Agriculture,
Kyoto University,
Kyoto, Japan.

31. Dr. Keizaburo Kawaguchi, Professor of Soil Science.
32. Dr. Kazutake Kyuma, Associate Professor of Soil Science.

XIV. SHIMADZU SCIENCE EQUIPMENT, KYOTO:

33. Mr. Masao Inoue, Head, Division of Science Equipment.

34. Mr. Tashio Kitano, Demonstrator, Science Equipment.

XV. 35. Dr. Manabu Sasa, Professor and Chief,
Department of Prasitology,
The Institute for Infectious Diseases,
University of Tokyo,
Shirokane-daimachi,
Minatoku,
Tokyo.

APPENDIX 8

ARCHITECTURAL AND ENGINEERING STUDIES AND CONSTRUCTION OF THE CENTRE BUILDINGS PROGRESS REPORT

November 1968 - Final Master Plan ready

The Final Master Plan was approved in January, 1969.

FIRST PHASE BUILDINGS

Temporary Admin., Classrooms, dining and lounge and some Staff Housing

First Hostel

May/June - Working drawings of the First Phase buildings to be ready.

June 1969 - Request Tenders for the construction of First Phase Buildings.

July 1969 - Start construction of the First Phase Buildings.

Jan. 1970 - Completion of the First Phase Buildings

SECOND PHASE BUILDINGS

Administration, Information Centre, Library, Teaching and Science Blocks, Second and Third Hostels, Staff Housing and International House.

Jan. 1970 - Work drawings of Second Phase Buildings to be ready.

Feb. 1970 - Request tenders for the construction of the Second Phase Buildings

March 1970 - Start construction of the Second Phase Buildings.

Dec. 1971 - Complete construction of Second Phase Buildings

Dec. 1971 - Permanent Centre Buildings ready

Please refer annexure attached for revised phased capital costs for Centre Buildings.

APPENDIX 8 (Cont'd)

REVISED PHASED CAPITAL INVESTIMENT - BUILDING COSTS (1st March '69)

(In US$1,000)

	Jan 69	July 69	Jan 70	July 70	Jan 71	July 71	Dec 71	
I. AT SITE ADJOINING AND IN MALAYAN TEACHERS' COLLEGE, PENANG.								
1. First Phase								
(a) First Hostel	30	180						210
(b) Dining Block serving as Temp. Admin. & classrooms	25	100						125
2. Site Development								
(a) Earthworks	50	30	20	20				120
(b) Roads		10	10	10	10	10		50
(c) Covered Walks				10		10		20
3. Second Phase								
(a) Administration Building			25	50	50	50		175
(b) Information, Library and Audio-Visual Aids Centre			35	40	40	40		155
(c) First Teaching Block			20	35	40	40		135
(d) First Laboratory Block			30	50	50	50		180
(e) Second Hostel			60	75	75			210
(f) Third Hostel				60	75	75		210
(g) Second Teaching Block				35	50	50		135
4. Staff Housing								
(a) 6 Class C type single houses	15	30	30	15				90
(b) 4 Class D type Semi-detached houses	10	15	15	10				50
(c) Workers Quarters 20 Units	10	10	20					40
TOTAL I	140	375	265	410	390	325		1905
II. AT SITE ADJOINING PENANG CIVIC CENTRE, RENONG GROUND, PENANG.								
(a) International House: 60 rooms airconditioned (by Malaysia)			50	50	100			200
(b) 10 staff apartments (by U.S.A.)			25	25	50			100
(c) (i) Piling and Foundation (by Malaysia)		20	35					55
(ii) Lifts & Airconditioning (by U.S.A.)				25	40			65
TOTAL II		20	110	100	190			420
GRAND TOTAL I & II	140	395	375	510	580	325		2325

BROCHURE OF THE REGIONAL CENTRE (PROGRESS REPORT)

At the Fourth Meeting of the Steering Committee, Item 13 - the preparation of the brochure of the Regional Centre - was discussed as per minute 13 in document P5/SCMS/15 shown below for easy reference:-

13.1 The Meeting considered the general headings for the brochure as submitted by the Programme Co-ordinator and suggested to include the following items:

  13.11 Organisation Charts showing relationship between SEAMEC and SEAMES;

  13.12 Reproduction of SEAMEC Charter signed by the seven participating countries.

13.2 It was also decided that any other proposals be submitted in writing to the Programme Co-ordinator by members.

13.3 It was agreed that there was a need for a more comprehensive and integrated public relations programme, and the brochure was a critical item for which expert advice was necessary. The Meeting was given to understand that there was a possibility of getting a short term consultant through AID. The Meeting agreed that the matter of engaging an expert to help in the preparation of a Centre Public Relations programme, including a brochure, should be brought up for discussion at the Project Directors Meeting at Chiengmai.

This matter was discussed at the Project Directors Meeting where it was stated that US/AID had arranged for the services of a Publicity Consultant in the person of Mr. Sterling Seagrave of Bangkok. The Project Directors were further informed that Mr. Seagrave would be visiting the different Centres and would assist in the preparation of brochures.

The Programme Co-ordinator met Mr. Seagrave at the Fourth Conference of SEAMEC at Jakarta and arranged that Mr. Seagrave call at the Centre on 13th January, 1969.

Accordingly Mr. Seagrave visited the Centre as arranged and discussed a draft format of the brochure on the draft outlines agreed upon by the Steering Committee. Mr. Seagrave was handed relevant documents and newsletters and taken round on a visit of the site of the Centre in the campus of the Malayan Teachers' College. Later Mr. Seagrave called on the Secretary, Penang Tourist Association, and obtained various tourist guide and information pamphlets regarding Penang, Malaysia. The Programme Co-ordinator also took Mr. Seagrave round various places of educational and scenic interest located on the Island of Penang.

Mr. Seagrave sent the following on the 4th of February:-

(i) A "dummy" showing colours format of the layout of the numbered pages of the brochure.

(ii) The different coloured photographs that would have to be taken.

(iii) The draft text materials for the brochure.

Mr. Seagrave also included with the above his suggested text for the advertisement in Time-Life magazine. The Programme Co-ordinator then invited Mr. Seagrave to visit the Centre again on the 14th and 15th of February so as to complete some of the photographic work and revise part of the layout of the brochure as suggested during discussions which the Programme Co-ordinator had had with Mr. J.E.B. Ambrose, the Chairman, Mr. Slattery, the Planning Consultant and Mr. Ron Rogers, the RED Liaison Officer, U.S. Embassy, Kuala Lumpur. The Programme Co-ordinator was later informed that Mr. Seagrave had completed his tenure of contract with US/AID and was not available.

Mr. Slattery, the Planning Consultant, helped in the revision of the text materials for the brochure and gave the revised outline of the brochure as per annexure attached.

The various photographic scenes required for the brochure have been taken with the co-operation of Mr. Khoo-Yeoh Gan Hong of the Education Department and Mr. Donald Chuah of St. Xavier's Institution, Penang.

On March 10th and 11th the Chairman and the Programme Co-ordinator had discussions with Cathay Advertising Ltd. and arranged for their final draft and suggested format of the brochure to be ready before the Fifth Meeting of the Steering Committee.

OUTLINE FOR BROCHURE

ANNEXURE TO APPENDIX 9

1. FRONT COVER WITH RECSAM DESIGN
2. INSIDE COVER WITH FLAGS as proposed
3. TEASER TEXT
4. COLOUR PHOTO OF PENANG WITH TEXT AT BOTTOM
5. RECSAM EDUCATION - INTRODUCTION
6. SEAMEC RELATIONSHIPS
7. CENTRE FUNCTIONS
8. " " (continued)
9. CENTRE ORGANISE
10. CENTRE PROGRAMMES - CENTRE FOLD
11. " "
12. PAGE OF PHOTOS SEAMES RELATED ACTIVITIES PLUS TEXT
13. " " " MTC AREA PLUS TEXT
14. MASTER PLAN - Split in Centre or fold out
15. MASTER PLAN - with Blank Page on Back
16. ARCHITECTURAL RENDICION - ELEVATION - HOSTELS etc.
17. TEXT OF A & E WORK
18. FUNDING OF RECSAM
19. " " " Page 100 of Development Plan
20. KEY PERSONNEL
21. ROSTER OF PARTICIPANTS
22. BACK COVER - with map

LINKS WITH NATIONAL AND INTERNATIONAL AGENCIES

At the Fourth Meeting of the Steering Committee it was agreed that suitable links be established with national and international agencies.

(i) Links with UNESCO and its associated agencies

This matter was raised by the Chairman of the Steering Committee at the Project Directors' Meeting in Chiengmai in November, 1968. The Director of SEAMES gave his assurance at that meeting that this matter would be one of the items for discussion by the Ministers at the Fourth SEAMEC Conference in Jakarta, from Jan. 7th - 9th, 1969. The Ministers adopted the following resolution at the Fourth Conference.

- "Considering that the interests and activities of such organisations as UNESCO, UNDP, ECAFE, FAO and ADB are related to the purposes of the organisation, the council authorizes the directors to enter into consultations with such organisations with a view to establishing effective working relationships with such organisations and agencies in order to ensure mutual benefit and effective cooperation."

The Chairman of the Steering Committee followed this up with a letter to the Director of SEAMES on 21st January, 1969, when he addressed the Director on the subject of establishing working relations with UNESCO. At the same time the Chairman also provided a suggested draft letter which the Director, SEAMES, would use in writing to Mr. Maheu, the Director-General of UNESCO, Paris, France.

(ii) Links with National Agencies within the Region

The Project Office would like members of the Steering Committee to suggest organisations and institutions in their own country which are involved in the promotion of Science and Mathematics education. Up to the present moment very few of these institutions have kept in touch with the Project Office.

(iii) Links with National Agencies outside the Region

The Project Office is pleased to report that the following organisations have had correspondence with the Project Office.

CEYLON

Science and Maths Project,
Ministry of Education - Ceylon.

Asian Regional Institute for School Building Research,
Colombo - Ceylon.

Ceylon Association for Advancement of Science -
Biology Project, ,
c/o University of Ceylon, Paredania,
Ceylon.

AUSTRALIA

Centre for Advancement of Teaching Techniques,
Macquarie University,
North Ryde, N.S.W.

JAPAN

During their visit to Japan in December last year, the Chairman and Programme Co-ordinator visited the following institutions:-

(a) Committee for South East Asia Studies,
Osaka City University.

(b) South East Asia Studies Centre, Kyoto University.

These two institutions have agreed to establish working relations with RECSAM.

SEAMEC REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS

Guidelines for The National Co-ordinating Committee

1. General Objective:

The National Co-ordinating Committee, acting as a professional link with the Regional Centre, is responsible for all activities in each member country in the furtherance of the following general objective of the Regional Centre:

> "To help the participating countries in improving the teaching of Science and Mathematics in the region in order to lay the foundations for meeting the technically and scientifically trained manpower requirements of the region."

2. Functions:

In order that the National Co-ordinating Committee in each member country could achieve the general objective of the Centre, the following functions have been proposed for incorporation in the constitution of the Committee:

a. interpreting and implementing the programmes of the Regional Centre.

b. mobilizing and involving educators in the field of mathematics and science in the programmes of the Regional Centre.

c. advising the Regional Centre of the needs of the member country in the field of education in mathematics and science.

d. recommending the best qualified candidates for the Centre staff.

e. providing professional guidance in developing projects and recommending future Centre projects.

f. accepting responsibility for the national implementation, with maximum multiplier effects of the Regional Centre projects which include activities such as the planning and conducting of pilot programmes, national evaluation, feedback to the Regional Centre, in-service courses, curriculum development and review.

g. selecting national participants for the various Centre projects.

h. exchanging information with the Centre on the latest activities and developments related to science and mathematics education.

i. making specific requests for special services on national problems in relation to science and mathematics education.

j. encouraging the establishment/development of national science centres, science museums, science institutions, seminars, and meetings of professional and technical experts in the member country.

k. stimulating national interest in the writing of scientific papers and publication of scientific research in mathematics and science education. Incentives could be offered, such as scholarships, prizes and air-round-trips to the Regional Centre to present papers.

3. Composition of the Committee:

It is suggested that a professional person of authority and stature in science or mathematics disciplines be invited to head the National Co-ordinating Committee in each member country.

Memebers of the Committee should be drawn from various national organisations, chambers of commerce and industries and professional associations in order to ensure a broad base of representative interests and expertise on the national level. Although the actual number of members of the Committee is best left to each member country, the following are suggested for the composition of the Committee:

a. Nominee of the Minister of Education

b. Representative of the Ministry of Foreign Affairs.

c. Science and Mathematics specialists (an equal number of counterparts of divisional heads at the Regional Centre is desirable).

d. Representatives from scientific and mathematics associations.

e. Representatives from commerce and industry

f. Representative from National Science Centre.

g. Representative from Teacher Education and Research Divisions of the Ministry of Education.

h. Representatives from national science and mathematics teacher associations.

i. Representatives of the Faculties of Science and Mathematics Teacher Education of Universities.

It is also suggested that the Steering Committee members in each country be advisers to the National Co-ordinating Committee on matters of Regional Centre policy. They preferably should not be members of the National Co-ordinating Committee for two reasons:

a. To broaden the base of interest by encouraging other competent senior professionals to become involved in the Regional Centre activities.

b. To separate the makers of Centre policy from those implementing Centre programmes on the National level.

4. Philosophy of Operation:

As the link of communication, co-ordination and action between the Regional Centre and various national programmes, the National Co-ordinating Committee is conceived as a highly competent professional group chairmanned by a person of stature and authority in his country. One could visualize the Committee ideally as composed of professional counterparts to the senior staff at the Regional Centre. For example, the Research Head might have a counterpart in each country, with which he keeps in touch and co-ordinates on Research Division projects. The same could hold for the various areas within the Training Division, as well as Special Services and Information Centre.

Further, it would be desirable if professional co-ordination could be done on as informal a basis as possible, so that where some of the National Co-ordinating Committee responsibilities also exist in another broader national organisations, co-ordination between these organisations and elimination of duplication of any function could be ensured.

The Chairman of the National Co-ordinating Committee should have freedom to make direct contact with the Centre Director on professional problems.

The Chairman would work through the Steering Committee members on problems involving centre policy.

It is recommended that there be at least one annual meeting of all National Co-ordinating Committee Chairmen with the Regional Centre Director and Staff to review progress and discuss problems.

APPENDIX 12.B

GUIDELINES FOR THE NATIONAL CO-ORDINATING COMMITTEE

1. General Objective:

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2. Functions:

In order that the National Co-ordinating Committee in each member country could achieve the general objective of the Centre, the following functions have been proposed for incorporation in the constitution of the Committee:

(a) interpreting and implementing the programmes of the Regional Centre.

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(c) advising the Regional Centre of the needs of the member country in the field of education in mathematics and science.

(d) recommending the best qualified candidates for the Centre staff.

(e) providing professional guidance in developing projects and recommending future Centre projects.

(f) accepting responsibility for the national implementation, with maximum multiplier effects of the Regional Centre projects which include activities such as the planning and conducting of pilot programmes, national evaluation, feedback to the Regional Centre, in-service courses, curriculum development and review.

(g) Selecting national participants for the various Centre projects.

(h) exchanging information with the Centre on the latest activities and development related to science and mathematics education.

(i) making specific requests for special services on national problems in relation to science and mathematics education.

(j) encouraging the establishment/development of national science centres, science museums, science institutions, seminars, and meetings of professional and technical experts in the member country.

(k) stimulating national interests in the writing of scientific papers and publication of scientific research in mathematics and science education. (Incentives could be offered, such as scholarships, prizes and air-round-trips to the Regional Centre to present papers).

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It is suggested that a professional person of authority and stature in science or mathematics disciplines be invited to head the National Co-ordinating Committee in each member country.

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(a) Nominee of the Minister of Education.

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(c) Science and Mathematics specialists (an equal number of counterparts of divisional heads at the Regional Centre is desirable).

(d) Representatives from scientific and mathematics associations.

(e) Representatives from commerce and industries.

(f) Representative from National Science Centre.

(g) Representative from Teacher Education and Research Divisions of the Ministry of Education.

(h) Representatives from National Science and Mathematics Teachers' Association.

(i) Representation of the Faculties of Science and Mathematics Teacher Education of Universities.

It is also suggested that the Steering Committee members in each country be advisers to the National Co-ordinating Committee on ma matters of Regional Centre policy. They preferably should not be members of the National Co-ordinating Committee for two reasons:

(a) To broaden the base of interest by encouraging other competent senior professionals to become involved in the Regional Centre activities.

(b) To separate the makers of Centre policy from those implementing Centre programmes on the National level.

4. Philosophy of Operation

As the link of communication, co-ordination and action between the Regional Centre and various national programmes, the National Co-ordinating Committee is conceived as a highly competent professional group chairmanned by a person of stature and authority in his country. One could visualize the Committee ideally as composed of professional counterparts to the senior staff at the Regional Centre. For example, the Research Head might have a counterpart in each country, with which he keeps in touch and co-ordinates on Research Division projects. The same could hold for the various subject areas within the Training Division, as well as Special Services and Information Centre.

Further, it would be desirable if professional co-ordination could be done on as informal basis as possible, so that where some of the National Co-ordinating Committee responsibilities also exist in another broader national organization, co-ordination between these organizations and elimination of duplication of any function could be ensured.

The Chairman of the National Co-ordinating Committee should have freedom to make direct contact with the Centre Director on professional problems.

The Chairman would work through the Steering Committee members on problems involving centre policy.

It is recommended that there be at least one annual meeting of all National Co-ordinating Committee Chairman with the Regional Centre Director and Staff to review progress and discuss problems.

INTER-REGIONAL PROJECT RELATIONSHIPS

(i) Regional English Language Centre, Singapore.

It was agreed at the Fourth Meeting of the Steering Committee that as SEAMEC trainees might have language difficulties in English, it would be useful to give them an intensive Comprehensive Course in English before they attended the Science and Mathematics courses at RECSAM. It was suggested that this matter be discussed with RELC in Singapore.

The Chairman of the Steering Committee had an informal discussion with the Director of RELC in November last year and this was followed up by the Programme Co-ordinator who had discussions with the Director of RELC and her staff. A report of these discussions is attached as Appendix 13.B for reference.

(ii) Regional Centre for Tropical Biology, Bogor, Indonesia.

The Chairman and Programme Co-ordinator have had several discussions with Dr. D. A. Tisna Amidjaja who visited the Ministry of Education, Kuala Lumour and RECSAM on several occasions regarding co-operation and collaboration between the two Centres. One point of interest to be noted is that the Planning Consultant of RECSAM, Mr. T. B. Slattery, is also a Visiting Consultant to the BIOTROP Centre. In this matter, Mr. Slattery provides a very good link between the two projects during the initial stages of planning.

The Chairman and Programme Co-ordinator attended an informal meeting of the Advisory Council of the BIOTROP Centre held at the Technical Teachers' Training College, Kuala Lumpur on 18th March, 1969. The Chairman, Mr. J. E. B. Ambrose, presented a paper (Appendix 13.D) at this informal meeting. During the discussion it was agreed that an Inter-Regional Project Workshop seminar on the preparation of text materials for a biology book suitable for use in high schools of the region should be held some time in early June to take advantage of the presence of senior biology teachers of the region who would be attending a BSCS Biology Adaptation Course at RECSAM Penang. It is also expected that officials of the BIOTROP Centre would be able to attend this seminar on their return from Chiengmai after the Advisory Council Meeting from May 27 to 30. A separate working paper has been prepared on this subject and is discussed as Item 14.

DISCUSSIONS WITH REGIONAL ENGLISH LANGUAGE CENTRE STAFF ON 19th DECEMBER, 1968 AT THE REGIONAL ENGLISH LANGUAGE CENTRE, SINGAPORE.

PRESENT: MRS. TAI YU LIN, DIRECTOR, RELC, SINGAPORE.
MR. R.K. TONGUE, CONSULTANT SPECIAL METHODS
DR. D.M. TOPPING, SPECIALIST LINGUISTICS
MR. A.D. MOLLER, SPECIALIST INST. MATERIALS
DR. D.P. HERST, SPECIALIST IN RESEARCH DESIGN

Special English Course for RECSAM Participants from Indonesia, Thailand, Vietnam and possibly Laos.

Introduction

At the Teachers' Vacation Course held in August 1968 it was observed that some of the participants from SEAMEC countries, especially those from Indonesia, Thailand and Vietnam found it diddicult to understand the lecturers who were teaching in English. It was purely a case of non-comprehension of the English Language and not misunderstanding of the content that had prevented these participants from benefiting fully and contributing their best towards the Vacation Course.

As such, it was recommended at the Fourth Meeting of the Steering Committee - Para 14.1., Page 16 of P5/SCMS/16:

> "That in future, should trainees have any language difficulties it would be useful to give them a short course in English before they join the Science and Mathematics courses in Penang. This could be done either in the Regional English Language Centre in Singaoore or at the Penang Centre."

In the light of the above recommendation, discussions were held by the Programme Co-ordinator with the Director of RELC and her consultants. It was generally felt that there are two types of courses that could be offered to enable participants to be sufficiently fluent in the English Language.

(a) General English Proficiency Course to upgrade both receptive skills (understanding and reading) and productive skills (oral and written expression) in using everyday English.

(b) Specialised training in English to acquire proficiency in professional or technical terminology - a Special English Proficiency Course.

There are three possible ways of carrying out the above two English programmes for SEAMEC participants.

(1) Train RECSAM participants who have difficulties in English comprehension at RELC using these specially designed intensive courses, prior to their joining the Science/Mathematics course at the RECSAM Centre.

or (2) Conduct the above intensive courses at the RECSAM Centre using some of the staff of RELC.

or (3) Conduct the first course in General English Proficiency for prospective RECSAM participants at national level by specially trained local teachers from RELC. This course may be conducted prior to selection of participants for the Science/Maths course at RECSAM and could be one of the conditional courses to be attended by all potential RECSAM participants. The supplementary Special English Proficiency Course which could be designed by RELC and RECSAM experts would be conducted at the RECSAM Centre by specially trained staff members of RECSAM who would have had their training at RELC in the use of language tapes and special methods. This course could be done in parallel with the Science/Maths Course at RECSAM.

Mrs. Tai and her consultants indicated that the third alternative appeared most feasible in view of the following factors:

(i) There was no budget provision in the RELC programme for the training of SEAMEC participants from other Centres.

(ii) Facilities and hostel accommodation at RELC would be inadequate to cope with the extra number of participants if the English courses were conducted at RELC.

(iii) Extra staff would have to be engaged by RELC to cope with the Special English courses.

In view of all these factors, Mrs. Tai suggested that the RECSAM Centre seriously consider the alternative (iii) proposal and, if this was found agreeable, details would be worked out by the staff of both RELC and RECSAM. One matter of immediate priority was, however, recommended by Mrs. Tai - that some consideration be given to the selection of a key staff member for the training course RELC was offering, beginning February/March 1969. This key person would be specially trained to be a staff member of the RECSAM in the General English Proficiency Programme and the Special English Proficiency Programme. In addition, Mrs. Tai further suggested that selected key personnel from Indonesia, Thailand and Vietnam should be brought for training at the RELC so that they could on their return to their home countries plan and conduct the General English Proficiency Courses at national level for SEAMEC participants of the RECSAM programmes.

C. Ganasalingam
Programme Co-ordinator.

1st January, 1969.

APPENDIX 13.C

SUGGESTED SPECIAL ENGLISH COURSE FOR RECSAM PARTICIPANTS FROM INDONESIA, THAILAND, VIETNAM AND POSSIBLY LAOS

At the Fourth Meeting of the Steering Committee - Para 14.1 Page 16 of P5/SCMS/16 - the following recommendation was made:-

> "That in future, should trainees have any language difficulties it would be useful to give them a short course in English before they join the Science & Mathematics courses in Penang."

Subsequently on 19th October, 1968, the Programme Co-ordinator held discussions with the Director of RELC and her consultants, who recommended that two types of course could be offered to RECSAM Course participants from Indonesia, Thailand, Vietnam and possibly also Laos.

(a) A General English Proficiency Course, the aim of which would be to upgrade receptive skills of understanding and reading as well as the productive skills of oral and written expression in the use of everyday English.

(b) A Special English Proficiency Course, aimed at helping the students to acquire proficiency in professional or technical terminology.

The Director of RELC further suggested that in view of the fact that RELC has no budget provision for the training of SEAMEC participants from other centres, and also because of inadequate hostel accommodation and staff at RELC, the most feasible solution would be for RELC to train a RECSAM staff member who would then conduct the courses at RECSAM.

During informal discussions the Programme Co-ordinator had with Mr. J.D. Cardosa, Lecturer at the Malayan Teachers' College, Penang, and specialist in the teaching of English as a Second Language, Mr. Cardosa very kindly agreed to write a paper on the suggested Special English Proficiency Course for discussion. This paper entitled: "Suggested Special ... English Proficiency Course for RECSAM Participants", is attached.

SUGGESTED SPECIAL ENGLISH PROFICIENCY COURSE FOR RECSAM PARTICIPANTS

At all levels of scientific and technological activity throughout the world, people read, write, hear and speak English more than any other language. Yet the language used by English speaking scientists and engineers when they talk or write about their subjects is often very puzzling to those for whom English is a second language. This is probably because they have learned English from teachers who have never needed to use it to talk or write on a scientific subject. The false impression thus created is that there is a special form of "Scientific English" quite different from the normal everyday English used by the man-in-the-street.

This is in fact not true at all. Scientists and engineers use the English of everyday life for non-scientific communication. But they find that their specialised subjects require a greater use of certain sentence patterns than would be expected of non-scientific contexts. For example, a scientist needs to be objective, and this leads to a style which is formal and impersonal and often characterised by the use of the passive voice. The use of symbols and formulae also influences the way scientists express themselves. Another consideration is that most scientific explanation and description is written, so a scientist cannot help but use many features of this written style in his scientific conversation.

One must also consider the fact that each branch of science has its specialised vocabulary. Many of these words are highly technical and can be learnt only with the aid of a dictionary, but others are commoner and used internationally and can therefore be easily recognised and understood. A more serious vocubulary problem is the understanding of such terms as "force", "moment", "work", "energy", "mass"etc., which are scientific in nature and have many different idiomatic usages quite unrelated to their scientific meaning.

It is my belief that RECSAM Course participants with the equivalent of about GCE 'O' Level English (Overseas School Cert.) can be successfully taught to speak and understand spoken scientific English, and also to achieve some ability in reading comprehension of scientific texts, if they were put through an intensive "crash" course of about 50 - 60 hours' duration - say 6 hours per day x 5 days per week x 2 weeks. I would include in the course the following items, in the main:-

1. Sentence Structures

1.1. Passive Voice - the use of the informal or objective form.

1.2. Present Simple Tense - universal statements - the reading of equations, formulae, definitions, the laws of science.

1.3. Present Continuous Tense & Present Simple - Reporting events in the present.

1.4. The Passive Voice with agent.

1.5. The Passive Infinitive

1.6. Modifiers.

1.6.1. Nouns which modify nouns - e.g. paraffin wax.

1.6.2. Groups of modifiers and the use of hyphens e.g. cylinder-head design.

1.6.3. Adverbs as modifiers - e.g. increasingly heavy demands.

1.6.4. Proper names as modifiers e.g. Boyle's Law.

1.7. The infinitive in statements expressing purpose or function.

1.8. Noun Clauses of all types.

1.9. Noun phrases using "how", "when", "where" followed by the infinitive.

1.10. Shortened sentences - difference between spoken and written descriptions.

e.g. compare (a) Because he was trapped inside the capsule without an adequate supply of oxygen, the astronaut was unable to survive.

and (b) Trapped inside the capsule - - - survive.

1.11. "As" and "since" clauses as used scientifically.

"as" and "since" can refer to "cause" or "time". Also other uses of "as" and "since".

1.12. Comparisons

1.13. "to be" and "to have" patterns.

e.g. (a) Gold resists corrosion by air or water.

(b) Gold is resistant to corrosion by air or water.

(c) Gold has a resistance to corrosion by air or water.

. (a) ascribes an activity to gold - it resists

. (b) " a quality " " - it is resistant

. (c) " a property of gold - it has resistance

1.14. Sentences with "if" - very common scientific usage.

e.g. "If the temperature is raised, the pressure of this gas will increase." A condition followed by a consequence.

2. Word - Study

2.1. Study of scientific terms and their meanings, with special emphasis on certain prefixes which are commonly used in scientific language.

e.g.
ante-
pre
post-
micro-
mono-
poly-
sub-
super-
therm-/thermo-
trans-
anti-
counter-
inter-
over- (above)
under- (below)
over- (too much)
under- (too little)
uni-
bi-
tri-
quadri-
multi-
de-
dis
im-/in-/ir-/un-
photo-
re-
semi-
tele-

2.2. The use of hyphens to form compound words.

Paper prepared by
J. D. Cardosa
Malayan Teachers' College,
Penang.

INTER-PROJECT RELATIONSHIP
CO-OPERATION AND COLLABORATION BETWEEN BIOTROP AND RECSAM CENTRES

BIOTROP, through its supporting Institution, the National Biological Institute, Bogor, has perhaps the most extensive collection of reference and other materials pertaining to the flora and fauna of the South East Asian region.

RECSAM proposes to carry out several training and research courses aimed at improving the teaching of Biology in particular, and its sections in general on integrated science in schools of the region. The objective is to improve the teaching of science in primary and secondary schools in order to lay the foundations for meeting the technically and scientifically trained manpower requirements of the region. RECSAM proposes to start initially at the elementary and secondary levels and to involve teacher training institutions and colleges of education, faculties of mathematics and science and other faculties as may be necessary in implementing the programmes. One of the guiding policies of RECSAM is that it should not duplicate, but instead should complement and supplement the efforts and programmes of existing regional, national, educational, academic and research centres in the member countries. It is vitally important that both the regional and national centres develop in parallel with RECSAM and gather strength and momentum through close co-operation and collaboration with each other.

RECSAM's objectives are mainly concentrated at the primary and secondary school levels and BIOTROP is mainly concerned with the university level. In the field of Biology, this close link-up from upper secondary to the university is very important. In order to plan training and research programmes in Biology for secondary and upper secondary schools, teaching material for the university must be clearly understood so that a smooth link from the upper secondary to the university can be maintained. In this respect BIOTROP would assist in several ways, for example:

(i) Organising training courses for key personnel in laboratory techniques in Biology.

(ii) Organising training courses for university staff in ecological studies.

(iii) Producing a pocket reference book on flora and fauna suitable for use by high school students.

(iv) Providing assistance to RECSAM when it undertakes the writing of a high school Biology text using the flora and fauna of the region.

(v) BIOTROP has offered its facilities for use by RECSAM staff and has also planned a training programme for them.

(vi) Staff from BIOTROP could work at RECSAM in order to assist in some of the research programmes.

The above efforts clearly show that there are many fields where the two Centres can closely co-operate with one another. This is only the beginning, and it is quite certain that there will be many other avenues of co-operation as both the Centres develop and gain strength as time goes on.

PROPOSED SCIENCE WORKSHOP

American Association
for the Advancement of Science

1515 MASSACHUSETTS AVENUE, NW, WASHINGTON, D.C., 20005

Phone: 387-7171 (Area Code 202) Cable Address: Advancesci,
Washington, D.C.

March 3, 1969.

Mr. J.E.B. Ambrose
Chairman, Steering Committee
SEAMEC Regional Centre for
Education in Science and Mathematics
Care, Ministry of Education
Federal House
Kuala Lumpur, MALAYSIA

A few weeks ago I had the pleasure of talking with Dr. Robert Jacobs of the Office of Regional Economic Development, Bangkok, about the very good progress that is being made in the development of the Regional Centre for Education in Science and Mathematics at Penang. When the three of us who made the initial feasibility survey for the Centre recommended that it be established, we did not realize that so much could be accomplished in such a short time.

At the time of the survey, I was a member of the staff of the National Science Foundation and had been involved in one way or another with the high school science curriculum projects which the National Science Foundation was supporting, and I have been much interested in observing efforts in Asia and Latin America to adapt some of these materials for use in other countries. At the present time, I am employed by the Commission on Science Education of the American Association for the Advancement of Science on a study of technical education at the college level in the United States. As a part of its overall concern with science education the Commission is just now completing the publication of a new science programme for elementary schools--Science--A Process Approach. It is one of five major new elementary science curricular studies that have been supported by the National Science Foundation and the U.S. Office of Education.

During the initial feasibility survey for the Penang Centre, the need for the improvement of elementary school science education was discussed many times, but the decision to concentrate first on secondary schools science was a wise one because much more had been accomplished at that level in the development of new approaches and new materials. However, a great deal more has been accomplished by now toward the improvement of elementary school science education. When Dr. Jacobs mentioned that there had been some serious discussion within the Steering Committee about giving some attention to elementary school science, I started thinking along the lines that I will outline below.

The following is offered at the risk of appearing to be presumptuous, but what follows is offered only as the suggestion of a possible course of action. A much larger variety of new approaches to elementary school science teaching is available for study than for high school science, but it would be relatively easy for the Centre at Penang to arrange a summer work-shop in which three or four elementary school teachers, supervisors, and Ministry of Education officials from each country actually work together with materials from each of the major projects as a part of the basis for the continued improvement of their programmes at home.

The Commission on Science Education of the American Association for the Advancement of Science, for example, might be in a position to organise such a work-shop in which one or two of the individuals who have been involved directly in the planning and development of teaching materials for each of the major projects in the United States would participate in exercises for the actual adaptation of samples of their materials for possible national or regional use. This has been tried successfully in Chile with Materials from the Commission's Science--A Process Approach.

Representatives from the following U.S. elementary school science projects might be asked to participate:

1. Conceptually Oriented Programme for Elementary Science (COPES), New York University:
2. Elementary Science Study (ESS), Education Development Centre, Newton, Massachusetts:
3. Minnesota Mathematics and Science Teaching Project (MINNEMAST), University of Minnesota:
4. Science--A Process Approach, American Association for the Advancement of Science (Commission on Science Education, Washington, D.C.:
5. Science Curriculum Improvement Study (SCIS), University of California.

In addition, there could be presentations from:

1. The elementary Science Curriculum Development Project (ESCD) in the Philippines; and
2. The Science Education for Elementary Schools and High Schools, K-12, project in Taiwan.

The project would require at least six months of preparation after funding has been assured. The principal cost during the planning period would be for one or two two-day conferences by the U.S. project representatives. A salaried co-ordinator probably would be needed beginning of the work-shop and for at least three weeks after its close. Visits of the U.S. representatives would be scheduled consecutively to provide for about one week of intensive work with materials from each project.

The above should not in any sense be regarded as a formal proposal calling for action of any kind. It has grown out of my personal interest in the Region and in the Centre and is put forth in that spirit. If there should be interest in such a project, however, I will be very happy to correspond with you about it.

Sincerely yours,

Sd. xxxxx

Howard F. Foncannon
Coordinator,
Technical Education Project,
Commission on Science Education.

Copies: Mr. C. Ganasalingam
Dr. Robert Jacobs

APPENDIX 16.A

STATUS OF COMPUTER SURVEY

At the last meeting of the Steering Committee in Bangkok in November 1968, the Committee reviewed a discussion paper* on the role of a computer in future operations of RECSAM.

This paper discussed the possibility of having a modern computer donated to the Centre by a private firm in the U.S.A. and recommedad a feasibility study to determine future needs, possible profit from rental of time and most importantly - costs of transportation, installation, training of operators and maintenance technicians, and spare parts.

The Committee approved this feasibility study and plans have been made to have the U.S.A. Computer expert that obtained the donated computer to visit Malaysia with complete information on the computer's configuration, including technical and operational data. This expert will work as part of a team comprising a computer expert from the Government of Malaysia, one from MARA Institute of Technology plus the RECSAM Consultant. It is expected that this study will take about two to three weeks and will answer the following basic questions:-

(1) What are the future computer needs of the Centre?

What are the needs of other organisations that might share the computer?

(2) What opportunities exist for profit from rental of the computer?

(3) What are the total costs and benefits associated with accepting the computer?

(4) If a computer is believed desirable, should it be stored and held for future installation at RECSAM or are there alternatives? E.g. installation in Kuala Lumpur and remote consoles in RECSAM.

At the time of the fourth meeting there was an urgent need to answer these questions before the end of 1968 calendar year. This deadline is no longer present and the Centre has time to prepare properly for the survey. The computer expert has been unavailable to date but will hopefully be able to visit Malaysia in late April or early May.

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* Appendix 18 of Report of the 4th Meeting of the Steering Committee of the SEAMEC Regional Center for Education in Science & Mathematics P5/SCMS/15 (Nov. 7 - 9, 1968).

Preliminary discussions with a number of potential users indicate considerable additional requirement for this computer over and above RECSAM. In particular the MARA Institute of Technology in Kuala Lumpur is interested in participating in the survey and presumably could be considered a potential user. They are also starting a computer course under the direction of a well qualified computer expert and hence could help solve the expected skilled personnel shortage problem.

Since the computer comes with a number of previously developed programmes for payrolls and banks, it is the opinion of local experts that a ready rental market exists, since rental charges can be held low.

Total cost of the survey is estimated at about US$4,800. This can be covered by the existing budget for the RECSAM Information Centre. A possibility also exists of sharing the survey costs with other potential users.

A final report will be prepared by the team and this report along with specific recommendations for action, will be submitted by referendum to members of the Steering Committee.

APPENDIX 16.B

EXTRACT FROM FOURTH CONFERENCE OF SEAMEC
(South East Asian Ministers of Education Council)
Djakarta - Indonesia
January 7-10th, 1969.

1. ESTABLISHMENT OF THE PERMANENT SECRETARIAT

The Conference considered working paper FMC/5/B.1.2.3 concerning the premises of the Permanent Secretariat, SEAMES Director and staffing, and the progress report on the Headquarters Agreement. After due deliberation, the Conference adopted the following resolutions.

1. THE COUNCIL TAKES COGNIZANCE OF THE PROGRESS MADE ON THE NEGOTIATION FOR A HEADQUARTERS AGREEMENT WITH THE ROYAL GOVERNMENT OF THAILAND.

2. THE COUNCIL INSTRUCTS THE SEAMES DIRECTOR TO FINALIZE THE NEGOTIATION FOR A SUITABLE HEADQUARTERS AGREEMENT COMPARABLE TO SIMILAR AGREEMENTS WITH OTHER INTER-GOVERNMENTAL ORGANIZATIONS, AND CHARGES THE SEAMES DIRECTOR TO SIGN THE AGREEMENT ON BEHALF OF THE ORGANIZATION, AFTER HAVING OBTAINED THE APPROVAL OF THE DRAFT AGREEMENT BY THE SEAMEC PRESIDENT.

3. THE COUNCIL EXPRESSES ITS DUE APPRECIATION OF THE VALUABLE SUPPORT EXTENDED BY THE ROYAL GOVERNMENT OF THAILAND IN PROVIDING A PERMANENT SITE AND IN UNDERTAKING THEREON THE CONSTRUCTION OF A NEW BUILDING FOR THE SEAMES HEADQUARTERS IN BANGKOK.

The Conference also considered working paper FMC/5/B.4 concerning the referendum on staff regulations and staff rules and, after due deliberation, adopted the following resolutions:

1. THE COUNCIL APPROVES AND AUTHORIZES THE USE OF:
   - 1.1 SEAMES STAFF REGULATIONS AND STAFF RULES (DOCUMENT: SEAMES/SRR/1D)
   - 1.2 REVISED SALARIES AND ALLOWANCES OF THE SEAMES STAFF (DOCUMENT: SEAMES/SRR/2D)

1.3 PERMANENT SEAMES : POSTS, SALARIES RECRUITMENT PROCEDURE AND JOB DESCRIPTION (DOCUMENT: SEAMES/SRR/2D)

AND ENJOINS THE SEAMES DIRECTOR TO EXERCISE THE UTMOST DISCRETION IN APPLYING THE ABOVE RULES AND REGULATIONS WITH A VIEW TO EFFICIENCY, EQUITY AND GEOGRAPHICAL DISTRIBUTION.

2. LEGALIZING THE REGIONAL CENTRES

The Conference considered the question of legalizing the regional centres and deliberated at length on the draft resolutions relating thereto. The Conference resolved to appoint an *ad hoc* committee consisting of one representative of each delegation to study the problem further and to submit revised draft resolutions.

The *ad hoc* committee duly met and submitted a report and revised draft resolutions which were subsequently considered and approved by the Conference. The *ad hoc* committee's report is reproduced as an appendix to this Report. The resolutions approved by the Conference were:

1. THE COUNCIL RESOLVES TO ENTER INTO AGREEMENT WITH THE GOVERNMENTS OF MEMBER STATES OF SEAMEO FOR THE ESTABLISHMENT OF THE RESPECTIVE CENTRES AND INSTRUCTS SEAMES TO ENTER INTO CONSULTATION WITH THE GOVERNMENTS OF THE MEMBER STATES TO DRAFT SUCH AGREEMENTS FOR THE APPROVAL OF SEAMEC. IN DRAFTING SUCH AGREEMENTS, SEAMES SHOULD TAKE INTO ACCOUNT THE REGIONAL CHARACTER OF THE CENTRES AS WELL AS THEIR INDIVIDUAL CHARACTERISTICS, BUT WITH REGARD TO PRIVILEGES, IMMUNITIES AND TAX EXEMPTIONS GRANTED BY THE HOST GOVERNMENTS TO THEIR RESPECTIVE CENTRES, THERE SHOULD BE UNIFORMITY IN ALL AGREEMENTS AS FAR AS POSSIBLE.
2. THE COUNCIL INSTRUCTS SEAMES TO ENTER INTO CONSULTATION WITH PROJECT DIRECTORS TO FINALIZE THE CONSTITUTION OF THE RESPECTIVE CENTRES FOR THE APPROVAL OF SEAMEC.

3. MEMBERSHIP IN SEAMEO: INTER-RELATIONSHIPS BETWEEN SEAMEO AND NON-SEAMEO COUNTRIES

This item of the agenda, orginally scheduled for discussion in Plenary Session II, was carried over to Plenary Session III. As a result of the deliberations on this item by the Conference in closed session, the following resolutions were adopted:

1. THE COUNCIL AUTHORIZES THE SEAMES DIRECTOR TO APPROACH BURMA AND COMBODIA WITH A VIEW TO ADMITTING THEM TO THE FULL MEMBERSHIP OR PROGRAMME PARTICIPATION.

2. THE SEAMEC DECISION REGARDING THE NON-SEAMEO COUNTRIES IS AS FOLLOWS:

   A. THAT THE FACILITIES IN THE VARIOUS SEAMEO REGIONAL CENTRES MAY BE MADE AVAILABLE TO PERSONS FROM SUCH COUNTRIES PROVIDED THAT CANDIDATES FROM SEAMEO COUNTRIES SHALL BE GIVEN PRIORITY:

   B. THAT ANY FORM OF ASSISTANCE FROM NON-SEAMEO COUNTRIES OR INTERNATIONAL ORGANIZATIONS WILL BE WELCOME.

3. CONSIDERING THAT THE INTERESTS AND ACTIVITIES OF SUCH ORGANIZATIONS AS UNESCO, UNDP, ECAFE, FAO AND ADB ARE RELATED TO THE PURPOSES OF THE ORGANIZATION, THE COUNCIL AUTHORIZES THE DIRECTOR TO ENTER INTO CONSULTATIONS WITH SUCH ORGANIZATIONS WITH A VIEW TO ESTABLISHING EFFECTIVE WORKING RELATIONSHIPS WITH SUCH ORGANIZATIONS AND AGENCIES IN ORDER TO ENSURE MUTUAL BENEFIT AND EFFECTIVE COOPERATION.

SEAMEC PROJECTS

The Project Directors presented status reports on the following projects:

SEAMEC Tropical Medicine and Public Health Project (Thailand); SEAMEC Regional Centre for Graduate Study and Research in Agriculture (Philippines); SEAMEC Regional Centre for Education in Science and Mathamatics (Malaysia); SEAMEC Regional English Language Centre (Singapore); SEAMEC Regional Centre for Tropical Biology (Indonesia); SEAMEC Regional Centre for Educational Innovation and Technology (Vietnam).

The following resolutions submitted by Project Directors in connection with their status reports were adopted by the Conference:

TROPICAL MEDICINE

1. THE COUNCIL APPROVES THE CHANGE OF THE NAME OF THE PROJECT FROM "SEAMEC CENTRAL COORDINATING BOARD FOR TROPICAL MEDICINE" TO "SEAMEC TROPICAL MEDICINE AND PUBLIC HEALTH PROJECT."

2. THE ORGANIZATIONAL FORM OF THE SEAMEC TROPICAL MEDICINE AND PUBLIC HEALTH PROJECT CONSISTS OF THE CENTRAL COORDINATING BOARD AND THE NATIONAL TROPICAL MEDICINE AND PUBLIC HEALTH CENTRES OF INDONESIA, LAOS, MALAYSIA, PHILIPPINES, SINGAPORE, SOUTH VIETNAM AND THAILAND.

3. THE COUNCIL APPROVES IN PRINCIPLE THE REWRITTEN DEVELOPMENT PLANS OF THE FIVE NATIONAL TROPICAL MEDICINE AND PUBLIC HEALTH CENTRES OF INDONESIA, LAOS, MALAYSIA, PHILIPPINES AND THAILAND.

4. THE COUNCIL APPROVES, SUBJECT TO FURTHER REVIEW, THE PROPOSED BUDGET OF THE CENTRAL COORDINATING BOARD FOR THE YEARS 1969-1974, A TOTAL OF US$2,195,000, AND THE CAPITAL DEVELOPMENT FUND FOR 1969 of US$210,000.

5. THE COUNCIL APPROVES, SUBJECT TO FURTHER REVIEW, THE PROPOSED REQUIREMENTS OF THE FUND FOR IMPLEMENTING THE FOUR NATIONAL CENTRE REGIONAL PROGRAMMES OF INDONESIA, MALAYSIA, PHILIPPINES, AND THAILAND.

6. THE COUNCIL APPROVES THE PROPOSED BUDGET FOR SPECIAL FUNDS TO SUPPORT REGIONAL ACTIVITIES OF THE TROPICAL MEDICINE AND PUBLIC HEALTH PROJECT DURING THE 1969-1974, A TOTAL OF US$1,964,000 (+US$1,656,400).

TROPICAL AGRICULTURE

7. THE COUNCIL APPROVES THE FUNDING SCHEME FOR THE CAPITAL DEVELOPMENT PROGRAMME OF SEARCA AS EMBODIED IN THE MEMORANDUM OF UNDERSTANDING (COPY ATTACHED) BETWEEN THE REPRESENTATIVES OF THE UNITED STATES GOVERNMENT (USG) AND OF SEARCA, ALSO REPRESENTING THE GOVERNMENT OF THE PHILIPPINES (GOP), WITH PARTICULAR REFERENCE TO THE LIBRARY, STAFF HOUSES AND STUDENT DORMITORIES AND APARTMENTS.

8. THE COUNCIL APPROVES THE "PHASED" FIVE-YEAR OPERATIONAL BUDGET OF SEARCA, ALSO EMBODIED IN THE AFOREMENTIONED MEMORANDUM, SUCH BUDGET TO BE IMPLEMENTED BEGINNING JULY 1, 1969.

MATHEMATICS AND SCIENCE

9. THE COUNCIL APPROVES THE PROGRAMME OF ACTIVITIES IN THE FINAL DEVELOPMENT PLAN P5/SCMS/14 WHICH WAS REFINED AS A RESULT OF THE FUNDING PRINCIPLES DECIDED BY THE COUNCIL AT ITS THIRD CONFERENCE AND WHICH WAS FURTHER MODIFIED IN THE LIGHT OF THE FUNDING PLAN PROPOSED BY THE HOST GOVERNMENT OF MALAYSIA.

10. THE COUNCIL APPROVES THE EXTENSION OF THE NURTURING PERIOD OF 1ST JULY 1968 AND ENDING ON 30TH JUNE 1969 TO 30TH JUNE 1970.

11. THE COUNCIL SUPPORTS THE REQUEST BY THE STEERING COMMITTEE FOR AN ADDITIONAL BUDGET OF US$417,572 FOR THE SECOND PHASE OF THE NURTURING PERIOD, I.E. 1ST JULY 1969 TO 30TH JUNE 1970.

12. THE COUNCIL SUPPORTS THE FUNDING PLAN AS PROPOSED BY THE MALAYSIAN GOVERNMENT AND APPROVES THE FIVE-YEAR (1ST JULY 1970 - 30TH JUNE 1975) BUDGET OF:

    (a) CAPITAL COSTS AND EQUIPMENT AMOUNTING TO US$2,830,000;

    (b) OPERATIONAL COSTS AMOUNTING TO US$2,657,000 AND

    (c) SPECIAL FUNDS AMOUNTING TO US$2,658,900

    (d) THE COUNCIL SUPPORTS AND ENCOURAGES THE ESTABLISHMENT OF NATIONAL CO-ORDINATING COMMITTEES IN EACH SEAMES COUNTRY TO ENSURE THAT CENTRE PROGRAMMES ARE PROPERLY LINKED TO NATIONAL SCIENCE TEACHING ACTIVITIES.

ENGLISH LANGUAGE CENTRE

13. THE COUNCIL APPROVES THE SEAMES REQUEST FOR AN EXTENSION OF THE SERVICES OF THE CURRENT COORDINATING COMMITTEE MEMBERS TO COVER THE ENTIRE PERIOD OF THE INTERIM OPERATIONAL PROGRAMME IN ORDER TO ENSURE CONTINUITY IN PLANNING AT THIS IMPORTANT STAGE.

14. THE COUNCIL INSTRUCTS THE SECRETARIAT TO CONDUCT A STUDY ON THE BEST METHOD OF GIVING RECOGNITION TO THE CERTIFICATES AWARDED BY THE RELC AND REPORT BACK TO THE COUNCIL.

15. THE COUNCIL APPROVES THE COORDINATING COMMITTEE'S RECOMMENDATION THAT NATIONAL COMMITTEES BE FORMED IN MEMBER COUNTRIES TO LIAISE CLOSELY WITH THE RELC STAFF ON MATTERS RELATING TO LIBRARY ACTIVITIES, INSTRUCTIONAL MATERIALS DEVELOPMENT, PUBLICATIONS, RESEARCH AND OTHER ACTIVITIES.

TROPICAL BIOLOGY

16. THE COUNCIL APPROVES THE CHANGE IN NAME OF THE CENTRE FROM "REGIONAL CENTRE FOR RESEARCH, TRAINING AND POST-GRADUATE STUDY IN TROPICAL BIOLOGY" TO "SEAMEC REGIONAL CENTRE FOR TROPICAL BIOLOGY", WHICH CAN BE ABBREVIATED TO "BIOTROP".

17. THE COUNCIL APPROVES THE EXTENSION OF THE INTERIM PERIOD FOR THE CENTRE UP TO AND INCLUDING JUNE 30, 1970, MORE TIME BEING NEEDED NOT ONLY TO ESTABLISH THE REGIONAL CENTRE ON A FIRM BASIS, BUT ALSO TO CONDUCT CERTAIN PROJECTS.

18. THE COUNCIL SUPPORTS THE RECOMMENDATION OF THE ADVISORY COUNCIL THAT A GRANT AMOUNTING TO US$237,250 BE SOUGHT FROM THE PRINCIPAL DONOR (USG) AND OTHER POSSIBLE SOURCES TO MEET THE EXPENDITURE FOR THE INTERIM PERIOD.

19. THE COUNCIL NOTES THE ESTIMATE FOR THE SPECIAL FUNDS IN THE FUNDING PLAN PROPOSED BY THE CENTRE, AMOUNTING TO US$3,250,030 FOR THE FIRST FIVE YEARS' OPERATIONAL PERIOD (JULY 1970 - JUNE 1975), AND CONCURS WITH THE INTERIM DIRECTOR'S PLAN TO MAKE FURTHER REFINEMENTS IN CONSULTATION WITH THE BIOTROP ADVISORY COUNCIL, WHICH WILL MEET IN MAY 1969.

20. THE COUNCIL URGES THAT THE SEAMEC MEMBER COUNTRIES IMPLEMENT FULL COOPERATION BETWEEN RESEARCH ORGANIZATIONS, INSTITUTES AND LIBRARIES IN THE RESPECTIVE MEMBER COUNTRIES, AND THAT COOPERATION BE EXTENDED TO INCLUDE INITIALLY: INTER-LIBRARY SERVICES: STANDARDIZATION OF DOCUMENTATION AND INDEXING PROCEDURES: COMPILATION OF BIBLIOGRAPHIES: EXCHANGE OF ... AND SPECIMENS: AND DISSEMINATION OF REGIONALLY IMPORTANT PUBLICATIONS AND OTHER PERTINENT INFORMATION. SUCH COOPERATION IS PRESENTLY HAMPERED BY A LACK OF UNIFORMITY IN REGULATIONS GOVERNING THE EXCHANGE OF ACADEMIC AND SCIENTIFIC MATERIALS AND PERSONNEL, THE MOST SERIOUS BEING IN CUSTOMS, EXCISE AND IMMIGRATION PRACTICES PERTAINING TO THE FIELDS OF ENDEAVOUR UNDERTAKEN BY BIOTROP.

EDUCATIONAL INNOVATION AND TECHNOLOGY

21. THE COUNCIL RE-AFFIRMS ITS INTEREST IN THE PROPOSAL SUBMITTED BY THE REPUBLIC OF VIETNAM FOR THE ESTABLISHMENT OF A REGIONAL CENTRE FOR EDUCATIONAL INNOVATION AND TECHNOLOGY IN SAIGON, VIETNAM.

22. THE COUNCIL TAKES COGNIZANCE OF THE SLOW BUT FRUITFUL DEVELOPMENTAL WORK OF THE PROJECT DURING THE PAST YEAR, AND APPROVES THE "PLANS FOR FURTHER ACTION" SUBMITTED BY THE REPUBLIC OF VIETNAM.

23. IN VIEW OF THE GREAT MERIT OF THE PROJECT, THE COUNCIL URGES THAT IT BE GIVEN MUCH STRONGER SUPPORT BY MEMBER-COUNTRIES, SO THAT THE PROPOSED CENTRE MAY BECOME OPERATIONAL AS SOON AS POSSIBLE.

24. THE COUNCIL DIRECTS SEAMES TO GIVE WHATEVER ASSISTANCE THE INNOTECH INTERIM PROJECT OFFICE MAY NEED TO CARRY OUT THE PROPOSED "PLANS FOR FURTHER ACTION."

APPENDIX 16.C

MEMORANDUM OF UNDERSTANDING CONCERNING THE ESTABLISHMENT OF THE REGIONAL CENTRE FOR EDUCATION IN SCIENCE AND MATHEMATICS

In order that the parties to this Memorandum of Understanding may achieve more rapid progress toward the realization of a Regional Centre for Education in Science and Mathematics, located at Penang, Malaysia, they have decided to set forth below the obligations and responsibilities that they are prepared to accept with respect to the implementation of the project for the Regional Centre.

1. The Southeast Asia Ministers of Education Secretariat (SEAMES), the Government of Malaysia (GOM) and the United States Government (USG) jointly agree as follows:

   (a) To take steps immediately to complete project planning and prepare a draft project agreement for the financing, construction and operation of the Centre;

   (b) It is understood that the implementation of all undertakings with respect to the Centre are contingent upon approvals and appropriations of the necessary funds by the respective governments;

   (c) To accept the principle that sharing of total project costs mutually agreeable to SEAMES, GOM and USG shall be on a 50-50 matching basis between the USG and GOM and that if the actual costs vary from the estimated costs to change the 50-50 ratio this will be the subject of joint discussion between the parties concerned, and adjustment of project plans or other accommodations, if necessary, will be made to preserve the 50-50 relationship. It is understood that GOM can seek contributions from third parties to meet the share of project costs.

2. The Government of Malaysia undertakes to:-

   (a) Provide a suitable site for the Centre;

   (b) Assume responsibility for full operating costs of the Centre for a five year period beginning July 1970 (except for costs to be borne by the SEAMES centrally) plus limited capital costs as mutually agreed. Near the end of the five year period the future programme and funding of the Centre will be subject to terms of a new agreement between SEAMEC and GOM. Such an agreement shall take into account the principle that GOM accepts primary responsibility for the future funding of the SEAMEC Math/Science Centre;

(c) Finance from its own resources all costs of International House type facilities of the Centre not directly associated with the mutually agreed programme needs of the Centre, provided however, that GOM may attribute for matching purposes contributions to finance International House type facilities that are for mutually agreed programme needs.

(d) Assure that the construction contractor utilizes equipment and supplies of United States origin to the extent items of local manufacture are not available and unless non-U.S. source procurement is agreed upon with the USG. It is agreed that project facilities financed hereunder shall in any event, subsequently be devoted to educational purposes.

(e) Utilize the services of a U.S. consultant(s) in connection with the work of the architect and not to proceed with construction until mutually acceptable building plans and construction arrangements have been adopted;

(f) Make arrangements for necessary audits of project accounts by any of the parties hereto;

(g) Take account of applicable statutes and policy restrictions of both governments relating to contracting and procurement as may be found necessary in the course of future negotiations leading to a firm project agreement;

(h) The GOM agrees to allocate all income from operation of the International House facilities to defray costs of operating the Centre and to reserve any excess of income over operational costs for funding SEAMEC projects in Malaysia.

3. The USG undertakes to:-

   (a) Finance the capital, commodity and equipment costs of the Centre in accordance with detailed building plans and design and construction arrangements which shall be mutually agreed upon and specified in the Project Agreement;

   (b) Provide interim supoort to the Centre along with the GOM and other participants in the project as may from time to time be agreed to, pending initiation of project operations in the new facilities;

   (c) Provide a minimum of two U.S. professional staff for up to five years, as needed, to work under the direction of the Project Director;

   (d) Finance up to 50% of mutually agreed Special Funds activities administered through SEAMES.

4. SEAMES undertakes, in keeping with relevant SEAMEC Funding Resolutions, to seek to provide the 50% of the Centre's requirements for Special Funds as may be agreed upon by the GOM, the USG and SEAMES.

For SEAMES (on behalf of SEAMEC):

For the Government of Malaysia:

For the United States Government:

REPORT OF SYMPOSIUM ON SCIENCE AND MATHEMATICS EDUCATION IN JAPAN, HELD AT THE CONFERENCE ROOM, TAKANAWA HOTEL, TOKYO ON 6TH APRIL, 1969.

Present: Members of the Steering Committee
Mr. Thadivisadhi Srimuang, Executive Secretary, SEAMES,
Mr. Suganuma, Deputy Secretary-General, Japanese National Commission for UNESCO,
Mr. Sasaoka, Head, Education Section,
Mr. Kato, Deputy Head, Education Section,
Dr. Koizumi, National Institute for Educational Research, Tokyo,
Mr. Nakajima, Specialist (Mathematics), Min. of Education,
Mr. Kobayashi, " (Science),
Mr. Ohno, " (Mathematics),
Mr. Takemura, " (Science),
Mr. Otsuka, " (Science),
Mr. Morihisa, Specialist of Textbook Examination (Science), Min. of Education,
Prof. Kakiuchi, University of Tokyo,
Prof. Yano, Tokyo Institute of Technology,
Mr. Ohashi, Inspector, Min. of Education,
Prof. Kawaguchi, Tokyo Gakugei University,

The Chairman of the Steering Committee, Mr. J.E.B. Ambrose chaired the morning session and welcomed the guest speakers Prof. Y. Kakiuchi and Mr. Ohashi to the symposium.

He outlined the six SEAMEC projects and their activities at various centres of member countries to improve regional cooperation and to assist each other in their national economic development.

The fifth meeting of the Steering Committee was held in Tokyo in cooperation with the Japanese Government. The aim of the Steering Committee in coming to Tokyo was to get acquainted with the science and mathematics education programmes in Japan and to see for themselves how the Japanese people achieved such a remarkable progress in science and technology.

The visits of the Steering Committee to Osaka, Kyoto and Nagoya were very fruitful. In Osaka they met scientists in OCUSEA and discussed possible mutual cooperation between OCUSEA and the Southeast Asian Studies Centre in Kyoto University and various SEAMEC centres in research and education.

Prof. Y. Kakiuchi, a world famous scientist and educator was then introduced to the symposium and was invited to deliver his paper on 'Science Education in Japan'.

In his paper Prof. Kakiuchi said that the rapid evolution of Japan into a modern capitalist country since the Meiji era was largely due to free compulsory education and the establishment of universities, and schools for professional and technical training in order to supply sufficient manpower for development.

He pointed out that some of the fatal characteristics of the Japanese mental attitude toward modern science were still persistent today. One of these is that knowledge can be transferred to others through mere words and symbols. This is not justified today as modern science deals with phenomena so remote from everyday observations.

One of the problems in the field of science education is how to integrate theory and practice in order to provide students with a better understanding of the fundamentals of science and nature. He also stressed that in the face of knowledge explosion it was absolutely necessary to discard the belief that to know more is better than to know less and to reduce the factual content in order to devote more time to understanding of things fundamental.

Science should be a part of culture, which is 'an ambitious creativity of the human mind' indispensable to human development. Theory is important but experimentation is the only doorway to bridging the human mind and nature.

It was stressed that in the learning situation active participation of pupils should be encouraged by all means and the role of the teacher is to give nothing more than the correct amount of suggestion when necessary.

The present stage of development of science education is as follows:-

1. The curriculum is in the process of revision towards the enquiry approach by reducing the content, thus giving more time to pupils to learn by doing.

2. It should be made flexible to meet the varied ability of pupils.

3. In-service training of teachers through study groups, teachers' associations, central and local governments and science education centres are under way.

He suggested that there whould be closer cooperation between teachers and scientists and more joint reasearch studies with schools should be undertaken. International cooperation in the field of science education has not gone beyond the conference table. Cooperative activities between countries must be fostered. It is encouraging to see that the Pacific Science Association is taking the initiative to set the pace in the Pacific area. UNESCO and UNDP should promote these international activities by way of financial support.

Question Time:-

Q1. Japan is already a leading country in science and technology. Is there still a need for improvement in science education?

A. Japan is entering into the second stage of technology. Technicians and engineers are getting too rigid a training at present. They cannot go very far without getting more basic science in school. They should be educated in science in order to be more inventive and creative.

Q2. Taking into consideration the retraining of teachers and the financial cost of new course materials, etc., where should a developing country start its science curriculum reform?

A. The elementary science programme should be given top priority but the pace should be gradual in view of the factors mentioned.

Q3. What are the national organisations in Japan which are responsible for the improvement of science education?

A. The Science Council of Japan is solely concerned with research but it is showing an early interest in education. The Science Education Council of Japan is very active and does make recommendations to the Ministry of Education. The Physical Society, the Chemical Society and the Biology Society of Japan show great interest in this field.

Afternoon Session

Dr. L. Soriano from the Philippines chaired the afternoon session. The two guest speakers, Prof. Yano of the Tokyo Institute of Technology and Prof. Kawaguchi of the Tokyo Gakugei University were introduced to the participants.

Prof. Yano in his paper 'How Should Mathematics Teaching Be?' traced the development of Japanese mathematics before the entry of western mathematics. Two of the greatest mathematicians in that era were T. Seki (1640-1708) who developed differential calculus independently of Newton and T. Takebe (1664-1739). D. Kikuchi (1855-1917) was the first Japanese mathematician to study western maths. Since then Japan has contributed much to research in mathematics.

The school system before the World War II was based on the German model. Arithmetic was the only maths. subject in elementary schools. The education system changed during World War II but the course content remained the same. In the late nineteen fifties mathematics study groups in Japan on modern maths. recommended changes in the maths. curriculum. As a result of their efforts the Ministry of Education has published new courses in mathematics for elementary schools after nearly ten years of trial. The new secondary curriculum covers a great deal of new mathematics which according to his opinion is most heartening.

Question Time:

Q. What is the best method for teaching proofs in mathematics?

A. This is a difficult question. Children learn differently. However, mathematical terms used in proofs should be made clear to pupils before attempting proofs. The meaning of such terms is vital in modern mathematics because of their precise implications.

Prof. Kawaguchi, the key person in mathematics curriculum revision, in his paper 'Mathematics Education in Japan', traced the development of a modern mathematics curriculum for schools since 1960 from the recommendations of mathematics study groups to the new standardised curriculum in mathematics, which will be introduced in 1971.

The new philosophy of mathematics was identified in the new programme. In-service training for teachers in elementary and secondary schools have been and are being conducted on a large scale by various bodies such as the Ministry of Education, the various boards of education, the Institute for Educational Research, the Japan Society of Mathematical Education and radio and TV programmes. Althogether nine pilot schools were involved in the project and their selection was representative of schools.

Question Time:

Q.1 Do schools here borrow terms like set, sub-set, equal and equivalent sets from US?

A. No. The Japanese have their own terms for these words. As for the elementary schools it is sufficient to use the concept of equal set.

Q.2 How is the trial curriculum revision decided?

A. The Special Curriculum Revision Council of the Ministry of Education is the policy making body which is served by various sub-committees in each subject. It took two years to complete the scope of the new curriculum which was based on findings of pilot schools, teachers reports, views etc.

Textbooks for the new curriculum are being published by private enterprises, based on the courses of study approved by the Ministry of Education. After the publishers have tried out their editions they will submit their texts to the Ministry for approval.

Q.3 Was there any evaluation made in Japan to show that modern mathematics was superior to traditional mathematics?

A. Even though the curriculum contains some new topics of new mathematics it was felt that it was not necessary to develop any special evaluation techniques. The evaluation was based on reports and feedback from pilot schools.

Q.4 What method of approach will be used for teaching the new curriculum?

A. Learning will be done through activity work with teacher in the background. The Ministry will produce a teacher's guide in due course to assist teachers to carry out the lessons.

The symposium ended at 1630 hrs. with thanks expressed by various members of the Steering Committee to the distinguished guest speakers.

JAPANESE ORGANISING COMMITTEE

Chairman		Mr. Taichi SASAOKA	Head, Education Division.
Vice Chairman		Mr. Motofumi KATO	Deputy Head, Education Division.
Secretaries:	1.	Mr. Kazushige KAWANA	Chief, School Education Unit, Education Division.
	2.	Mr. Shozo IIZAWA	Chief, Educational Cooperation Unit, Education Division.
	3.	Miss Sumi NIIMURA	Chief, Out-of-School Education Unit, Education Division.
	4.	Mr. Goro OGATA	School Education Unit.
	5.	Mr. Hajime NAGAHAMA	Educational Cooperation Unit.
	6.	Mr. Yoshihiro KITA	School Education Unit.
	7.	Miss Akiko HIROSE	Out-of-School Education Unit.
Assistants:	1.	Miss Yorie SUDO	Part-time clerk/receptionist.
	2.	Miss Hiroko NUMATA	Part-time clerk/receptionist.
	3.	Mrs. Sumi TAGUCHI	Typist.
	4.	Miss Mitsuko HAMAJI	Typist.
	5.	Mr. Hidebumi KATO	Tape Recorder Operator

SECRETARIAT

Mr. J. D. Cardosa	- Lecturer, Malayan Teachers' College, Penang, Malaysia.
Miss Tan Chui Tieh	- Project Office, Penang, Malaysia.

LIST OF STEERING COMMITTEE OFFICERS, PARTICIPANTS AND SUPPORT STAFF

1. THE STEERING COMMITTEE

Mr. J.E.B. AMBROSE, JSM, PJK. (Chairman)	- Director Teacher Training, Ministry of Education, Kuala Lumpur, Malaysia.
Dr. Liceria B. SORIANO (Vice-Chairman)	- Assistant Director, Bureau of Public Schools, Department of Education, Manila, The Philippines.
Mr. John TSENG (Acting Rapporteur)	- Acting Specialist Inspector (Science) Ministry of Education, SINGAPORE 10.

MEMBERS

Dr. Didin S. SASTRAPRADJA	- Executive Secretary, Indonesian Institute of Sciences, Djalan Tjhik Ditiro 43, Djakarta.
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Dr. Bitak RAKSOBOLDEJ	- Professor, College of Education, Bangkok, Thailand.
Dr. (Miss) Suchart RATANAKUL	- Lecturer, College of Education, Bangkok, Thailand.
Dr. Tran Van TAN	- Dean of Faculty of Pedagogy, University of Saigon, Saigon.
Dr. (Mrs.) Le Tue QUANG	- Faculty of Pedagogy, University of Saigon, Saigon.

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5. CONSULTANTS

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Mr. R. ROGERS - RED Liaison Officer.

6. OBSERVERS

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Mr. Allen C. CHOATE - Assistant Representative,
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Mr. Manabu KOBAYASHI - Science Specialist,
Ministry of Education.

Mr. Nobuyuki MORIHISA - Textbook Specialist,
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Mr. Kazuo MATSUMOTO - Department of Cultural Affairs,
Ministry of Foreign Affairs.

Mr. Kenzo NAKAJIMA - Mathematics Specialist,
Ministry of Education.

Mr. Seishiro OHO - Mathematics Specialist,
Ministry of Education.

Mr. Takeshi KANEMATSU - Secretary General,
Department of Cultural Affairs,
Ministry of Foreign Affairs.

Mr. Shinichi HASEGAWA - Editor of Japan Times,
Tokyo.

7. ADVISORS TO THE JAPANESE ORGANISING COMMITTEE

1. Mr. Ryoji ITO - Secretary-General,
Japanese National Commission
for UNESCO.

2. Mr. Kiyoshi SUGANUMA - Deputy Secretary-General
Japanese National Commission
for UNESCO.

APPENDIX 16.G

PROGRAMME

Monday 31st March, 1969

8.30 - 9.30 : Registration and Distribution of Documents.
(at the National Education Centre)

10.00 : Opening Ceremony

: Welcome address by
Mr. J.E.B. Ambrose
Chairman, Steering Committee.

: Address by
Dr. Soemantri Hardjoprakoso
Acting Director,
SEAMES, Bangkok.

: Address on behalf of
the Ministry of Education by
Mr. Ryoji Ito
Secretary-General
Japanese National Commission
for UNESCO.

: Mr. Ryoji Ito declares
the Fifth Meeting of
the Steering Committee open.

: Recess - Light Refreshments.

11.00 Plenary Session I
National Education Centre

12.30 : Official Buffet Luncheon by
Chairman, Steering Committee
at the National Education Centre.

14.00 - 16.00 Plenary Session II

16.00 : Exhibition of Science Education Materials

18.00 : Reception by
Mr. Ryoji Ito,
Secretary-General,
Japanese National Commission for Unesco,
at the Azabu Prince Hotel, Tokyo.

Tuesday 1st April, 1969

9.00 Plenary Session III

10.30 : Coffee Break

11.00 Plenary Session IV

11.30 : Lunch Break

14.00 Plenary Session V

16.30 : Visit to Japan Broadcasting Corporation (NHK), Tokyo.

Wednesday 2nd April, 1969

9.00 Plenary Session VI

10.30 : Coffee Break

10.45 Plenary Session VII

12.00 - 12.30 : Slides "RECSAM" AVA Room-Ministry of Education

12.30 : Lunch Break

14.00 : Visit to the Science Division, Tokyo Metropolitan Institute for Educational Research & In-service Training

Thursday 3rd April, 1969

8.40 : Leave Tokyo Station for Osaka by "Bullet Express" Hikari 301

11.50 : Arrive at Osaka Station (from now on a micro-bus will be used for transportation)

12.20 : Arrive at Shin Hankyu Hotel
Lunch Break

13.10 : Leave Shin Hankyu Hotel

13.40 : Visit Osaka Prefectural Science Education Centre

15.20 : Leave the Centre

15.30 : Visit Southeast Asian Studies Centre, Osaka City University

16.30 : Leave the Centre

17.00 : Arrive at Shin Hankyu Hotel

Evening : Overnight stay in Shin Hankyu Hotel, Osaka.

Friday 4th April, 1969

8.30 : Leave Osaka by bus for Kyoto

10.00 : Visit Shimazu Science Equipment Factory

12.30 : Arrive at Kyoto Tower Hotel
Lunch Break

13.40 : Leave the Hotel by bus on a Sight Seeing Tour of Kyoto.

Evening : Overnight stay in Kyoto Tower Hotel.

Saturday 5th April, 1969

8.05 : Leave Kyoto Station for Nagoya by Bullet Express" Kodama 108

9.09 : Arrive at Nagoya Station

9.30 : Visit Nagoya municipal Science Centre

10.40 : Leave the Centre

11.00 : Visit Yagami Science Equipment Manufacturing Co.

12.30 : Lunch given by Yagami Co.

14.11 : Leave Nagoya Station for Tokyo by "Bullet Express" Kodama 184

16.45 : Arrive at Tokyo Station

Sunday 6th April, 1969

Symposium on Science & Mathematics Education at Takanawa Hotel Opal Room

10.00 : "Science Education in Japan"
by Professor Yoshinobu Kakiuchi,
Institute for Solid State Physics,
University of Tokyo.

11.15 : Coffee Break

11.30 : "Various Problems on Science Education"
by Mr. Hideo Ohashi,
Inspector, Elementary & Secondary
Education Bureau,
Ministry of Education.

12.45 : Lunch Break

14.00 : "How should Mathematics Teaching Be?"
by Professor Kentaro Yano
Faculty of Science
Tokyo Institute for Technology

15.15 : "Mathematics Education in Japan"
by Professor Tadashi Kawaguchi
Faculty of Education
Tokyo Gakugei University

Monday 7th April, 1969

Morning : Preparation of Draft Report
(National Education Centre)

14.30 Plenary Session VIII

: Adoption of Final Report

: Press Communique

16.30 : Closing Ceremony

CLOSING ADDRESS BY MR. J.E.B. AMBROSE, CHAIRMAN OF THE STEERING COMMITTEE AT THE FIFTH MEETING OF THE STEERING COMMITTEE HELD IN TOKYO, JAPAN FROM 31ST MARCH - 7TH APRIL, 1969.

Mr. Takeshi Kanematsu, Director, Department of Cultural Affairs,
Ministry of Foreign Affairs,
Mr. Ryoji Ito, Secretary-General of the Japanese National Commission for
UNESCO,
Distinguished Guests,
Delegates,
Consultants and Observers,
Ladies and Gentlemen,

Our extremely useful and thoroughly enjoyable stay in Japan will come to an end soon after Mr. Kanematsu of the Ministry of Foreign Affairs officially declares the Fifth Meeting closed, and all our delegates will return to their respective countries happier, wiser and richer than before. It is obvious why I use the words "happier" and "wiser" but I think it is necessary to explain why I use the word "richer". I use the word "richer" to mean not a gain in wealth or material possessions but something more valuable, namely the friendships that have been established and the useful contacts that have been made with friendly organisations which would enable us to discharge our duties more efficiently on our return to our respective countries.

All the SEAMEC member countries have carefully prepared plans for economic development and we are extremely pleased to note that in the latest despatch from Bangkok concerning the business transacted at the recent Ministerial Conference for Economic Developments, the Foreign Minister of Japan, His Excellency Kaichi Aichi has promised considerable financial assistance to Southeast Asian countries in the 1970s.

It is to be pointed out that not much headway can be made by these National Governments with their plans for economic development, unless such plans include carefully prepared plans for educational development as well; because education and training are vitally necessary in order to combat poverty, famine, disease and ignorance which are so widespread in the Southeast Asian region. Six SEAMEC regional projects have been conceived and planned in order to help the SEAMEC member countries in their national efforts to meet their skilled manpower requirements to enable their citizens to overcome the handicaps under which they are living and to raise their living standards. As the regional projects have been planned to supplement and complement the efforts of the national governments of SEAMEC member countries in their endeavour to improve the living conditions of their peoples, it is hoped that the experience of Japanese educators and some of the financial assistance which Japan has promised to Southeast Asian countries could be channelled to the various SEAMEC regional projects to ensure their success; and our visit to Japan confirms that this would be possible.

We are grateful to the Japanese Government for their co-operation, and to the Japanese National Commission for UNESCO for having helped to draw up a well planned programme as a result of which we managed to discuss many important matters pertaining to the running of the Centre at seven plenary sessions held during the period 31st March to 2nd April, for planning a tour of Osaka, Kyoto and Nagoya from April 3rd to 5th as guests of the Japanese Government, for a Symposium on Science and Mathematics Education in Japan held at the Conference Room of Hotel Takanawa on April 6th, and for making the arrangements for today's closing session. The plenary sessions, the visits to places of scientific interest and the Symposium on Science and Mathematics Education have made our sojourn in Japan a most fruitful one.

As a result of our discussions during the plenary sessions, steps were taken to include on the International Advisory Council prominent educators in science and mathematics from Japan as well as members from the industrial sector of the United States of America, Holland and Malaysia. Professor Yoshinobu Kakiuchi has been invited to serve on the Council and he has agreed to do so.

Ways and means of strengthening links with National and International Organisations such as UNESCO, the Japanese National Commission for UNESCO, the National Institute of Education and Research for Japan and the Overseas Technical Co-operation Agency (OTCA) were also discussed.

One important topic discussed was Inter-Regional Project Relationships, and steps were outlined for promoting closer co-operation between RECSAM and RELC in Singapore, BIOTROP in Bogor, Indonesia, the Regional Centre for Graduate Study and Research in Agriculture at Los Banos, Philippines, and the Central Co-ordinating Board in Bangkok, Thailand.

Plans for two proposed Regional Workshops, one for the purpose of compiling a Biology Text-Book for the Region and the other for the purpose of studying a new approach to the teaching of science at Primary School level, called the "Process Approach", were discussed and formulated.

During the tour from April 3rd to 5th, visits were made to Osaka, Kyoto and Nagoya.

In Osaka visits were made to the Science Education Centre of Osaka Prefecture and Osaka City University.

At the Science Education Centre of Osaka Prefecture, Dr. Kuse welcomed members and outlined the scope of work of the Centre. The main objective of the Centre is to help teachers of primary, lower and upper secondary schools in Osaka to keep up to date in science and to carry out research projects in the field of science education. In the in-service training of teachers, the stress was mainly on the reinforcement of understanding of basic concepts and the necessary experimental work associated with these concepts. Later the Members of the Steering Committee were shown round the laboratories.

At the Osaka City University we were welcomed by Prof. Tatuo Kira on behalf of the Chairman of the Committee for Southeast Asian Studies of Osaka City University. A very useful and informative discussion was held in their Conference Room with a number of prominent scientists such as:-

Dr. Kazuo Huzita - Geology
Dr. Ken-ichi Ishii - Palaeontology
Dr. Munemi Kawabe - Animal Ecology
Dr. Syunzo Kawamura - Animal Ecology
Dr. Tatuo Kira - Plant Ecology
Dr. Shohei Kokawa - Plant Taxonomy
Dr. Shigeki Muramatsu - Human Geography
Dr. Kimio Yoshikawa - Entomology
Dr. Fujioba - Anthropologist

This session was chaired jointly by Dr. Kira on behalf of OCUSEA and myself as Chairman of the Steering Committee, and various topics were discussed. The functions of the Southeast Asian Ministers of Education Organisation were explained by the Programme Co-ordinator, Mr. C. Ganasalingam, after which Dr. Kira explained that the Committee for Southeast Asian Studies of Osaka City University was actively engaged in research activities in the fields of geology, palaeontology, plant ecology, primatology, cultural anthropology and human geography and this Committee would be prepared to co-operate with the SEAMEC Regional Projects in these fields. He also explained that the Kyoto Centre for Southeast Asian Studies had a new Director, Dr. Ichimura, who had succeeded Dr. Sagara. The Kyoto Centre was much bigger than OCUSEA as it had 3 full professors, many other associate professors and visiting professors; and this Centre also would be prepared to co-operate with RECSAM.

In the discussions that took place I explained the purpose of the RECSAM visit to OCUSEA, and this was to exchange views and establish links, and to secure the co-operation and collaboration of OCUSEA in the various projects of SEAMEC. One way in which co-operation could take place was by exchange of personnel and material. Dr. Kira stated that it was possible that OCUSEA and the Kyoto Centre for Southeast Asian Studies could assist RECSAM in the writing of biology text materials, as many of the research scholars from OCUSEA and Kyoto had carried out research work in the Southeast Asian Region. Dr. Kira also explained that Kyoto was intending to publish a series of monographs on tropical agriculture and also publishes a periodical journal connected with Southeast Asian Studies, four times a year.

At Kyoto a visit was made to the Shimadzu Science Equipment Division Factory. At this factory the organisation of Shimadzu and its activities was explained to all present. Later members were shown a demonstration of science equipment by Dr. T. Konohira, Professor of Industrial Chemistry of the Kyoto Instituge of Technology.

On April 5th a visit was made to the Nagoya Minicipal Science Museum at 9.30 a.m. RECSAM members saw a wonderful collection and display of working models using the latest techniques of AVE presentation on:

Modern Science and Technology
Home Life Science
Transportation
Chemistry
Dynamics and Mechanics
Physics
Telecommunications
Electric Power and Atomic Energy
Meteorological Phemomena and Disaster Prevention
A Special Exhibit for children showing simple experiments
Astronomy and Space Science

The Planetarium was also visited. This visit enabled members to observe the very close co-operation that exists between industry, university staff, teachers and lecturers with the Museum authorities. The delegates were of the opinion that they have yet to see such a comprehensive range of science equipment of educational interest to students and members of the public alike. It was felt that the existence of such a Centre would serve to stimulate interest in science on the part of pupils and teachers.

Later in the morning a visit was made to the Yagami Science Equipment Manufacturing Company. Here a very well thought out programme was planned and a wonderful reception was given by the President of Yagami and his staff. Members saw how the Import and Export Division of Yagami packaged items for export to various countries in the world. Later they were taken round to see an exhibition of science equipment and a demonstration was given of how a moving coil electric meter was assembled.

The Steering Committee is most grateful to the Government of Japan for its co-operation as well as for providing this Conference Room in the National Education Centre and the cost of local transport to Osaka, Kyoto and Nagoya; and to the Japanese National Commission for UNESCO for organising the meeting and providing all the support services. In particular we are indebted to Mr. Ryoji Ito for his keen personal interest in our affairs; to Dr. Soemantri Hardjoprakoso for his presence and encouragement; to Mr. Suganuma, Deputy Secretary-General of the Japanese National Commission for UNESCO for ensuring that all our proceedings went on smoothly; to Mr. Sasaoka the Head of the Education Section and Mr. Kato the Deputy Head of the Education Section, Mr. Iizawa, and Mr. Kawana for their assistance and strenuous efforts to make our programme a success.

Thanks are due to Dr. Jacobs who managed to find time to leave his desk at the U.S. Embassy in Bangkok to be present here in order to give his expert advice. We are grateful also to Mr. Ron Rogers of the U.S. Embassy in Kuala Lumpur for his presence; and to the Resident Consultant of RECSAM, Mr. T.B. Slattery who has been present at the meeting. His unassuming presence and advice helped us very much in our deliberations. Thanks are due to the Programme Co-ordinator for providing help in connection with the production of working papers and guidance on various matters raised at the various sessions. I am also very much indebted to the Vice-Chairman, Dr. Soriano of the Philippines and the Rapporteur from Singapore, Mr. John Tseng for all the work that they have done. Thanks are also due to Dr. Kakiuchi, Dr. Kawaguchi, Dr. Yano, Mr. Ohashi, Mr. Hardwick, Dr. Hodge, Dr. Ries, various Embassy Officials, Mrs. Ang Wai Hoong the wife of the Singapore Ambassadore to Japan, Mr. Thavisakdi Srimuang, Mr. Choate, Mr. U Kyan, Dr. Koizumi, Mr. Won, Miss Intarakuwhong, Mr. Subekti Dhirdjosaputro, Mr. Otsuka, Mr. Kobayashi, Mr. Morihisa, Mr. Matsumoto, Mr. Nakajima and Mr. Ono, for their unfailing interest in our proceedings. I also wish to thank all the Secretarial Staff - Mr. Cardosa, Miss Tan, Miss Numata, Miss Hirose and all the other secretaries for all their help.

Once again I wish to thank on behalf of the Steering Committee the Japanese Government for their co-operation and assistance, and in particular Mr. Kanematsu of the Ministry of Foreign Affairs, Mr. Ryoji Ito, Secretary-General of the Japanese National Commission for UNESCO and all his staff including his Deputy Secretary-General, Mr. Suganuma, for their professional and technical assistance which through the Organising Committee has done a tremendous amount of work both by day and night in order to ensure the success of this meeting.

May I wish all those who are leaving Japan to proceed home, "Bon Voyage".

Once again, thank you and "Sayonara".

APPENDIX 17.B

Address by Mr. Takeshi Kanematsu
Director of Department of
Cultural Affairs
Ministry of Foreign Affairs.

Mr. Chairman,

Ladies and Gentlemen:

Thank you very much for your kindness in giving me an opportunity to make a short speech.

The activities of SEAMEO and Japan are closely linked by friendship and cooperative efforts between the leading personalities on both sides.

This was illustrated when Japanese experts participated in the Seminar (in Bangkok) and the Symposium (in Tokyo) of the Centre for Tropical Medicine last year.

The fifth Meeting of the RECSAM Steering Committee in Tokyo was organised by Mr. Chang Min Kee and Mr. J.E.B. Ambrose, the Chairman, with the cooperation of Mr. Ryoji Ito, the Secretary-General of the Japanese National Commission for UNESCO, and was attended by experts from member countries and Japan.

In this decade where science and mathematics play a decisive role in all aspects of our daily life, the purpose of RECSAM with its far-reaching objectives is so fundamentally significant that the infrastructural preparedness for the well-being of the member countries in the coming decade can best be secured through the successful operation of Centre.

The friendship and cooperative efforts between SEAMEC member countries and Japan will contribute to this end.

Thank you.

APPENDIX 17.C

PRESS COMMUNIQUE

With the cooperation of the Government of Japan, the Fifth Meeting of the Steering Committee of the SEAMEC Regional Centre for Education in Science and Mathematics (RECSAM), situated in Penang, Malaysia was convened in Tokyo from 31st March to 7th April, 1969. Mr. Ryoji Ito, Secretary-General of the Japanese National Commission for UNESCO, addressed the gathering and declared the Meeting open at 10.00a.m. on 31st March at the National Education Centre, Tokyo, Japan. The objective of RECSAM is to improve the teaching of science and mathematics initially at the elementary and secondary school levels of the Member countries.

During the period 31st March to 2nd April, 1969, seven Plenary Sessions were held at the National Education Centre, Tokyo, Japan. From April 3rd to 5th the delegates went on a study tour of Educational and Scientific facilities of Osaka, Kyoto and Nagoya as guests of the Japanese Government and returned to Tokyo on the last day of the tour. On April 6th a Symposium on Science and Mathematics education in Japan was held at the Conference Room of the Hotel Takanawa. The final report was adopted at the closing session held at 2.30p.m. on April 7th, and the meeting was officially closed by Mr. T. Kanematsu of the Ministry of Foreign Affairs at 4.30 p.m. soon after the closing speech given by the Chairman of the Steering Committee.

The following were present at the opening ceremony:- the Acting Director, SEAMES, Dr. Soemantri Hardjoprakoso, a representative from the Japanese Ministry of Foreign Affairs, representatives from SEAMES Headquarters and the Regional Centre, delegates from the SEAMEC member participating countries consisting of the Republic of Indonesia, Malaysia, the Republic of the Philippines, the Republic of Singapore, the Kingdom of Thailand and the Republic of Vietnam, officials of the Japanese Ministry of Education as well as consultants and observers, representatives of the British Council, the Japanese National Commission for UNESCO, Asia Foundation, the National Science Foundation, observers from the Diplomatic Corps of interested countries and observers representing other interested organizations.

At the opening ceremony addresses were also given by the Acting Director, SEAMES, Dr. Soemantri Hardjoprakoso, and Mr. J.E.B. Ambrose, Chairman of the Steering Committee.

During the plenary sessions, the financial position of the First Interim Year of the Nurturing Period (1st July 1968 to 30th June 1969) was reviewed, and the Budget for the Second Interim Year of the Nurturing Period (1st July 1969 to 30th June 1970) was revised. The technical programmes planned for these two periods were reviewed in detail.

A Report of the Chairman's visit to Japan in November/December, 1968 to prepare the way for the Fifth Steering Committee Meeting in Tokyo was presented.

The Meeting was also informed of the progress achieved in respect of the Architectural and Engineering programme of the Regional Centre in Penang, the first phase of which is expected to take shape in January 1970, and the second phase is expected to be completed in the latter half of 1971. The Meeting also studied and approved the draft for a brochure publicizing the Regional Centre.

Steps were taken to include on the International Advisory Council prominent educators in science and mathematics from Japan as well as members from the industrial sector of the U.S.A., the Netherlands and Malaysia. Professor Yoshinobu Kakiuchi has been invited to serve on the Council and he has agreed to do so.

Ways and means of strengthening links with National and International Organizations such as UNESCO, the Japanese National Commission for UNESCO, the National Institute for Educational Research, Japan, and the Overseas Technical Co-operation Agency of Japan, were also discussed.

One important topic discussed was Inter-Regional Project Relationships, and steps were outlined for promoting closer cooperation between the Regional Centre for Education in Science and Mathematics in Penang on the one hand, and the Regional English Language Centre, Singapore, the Regional Centre for Graduate Study and Research in Agriculture, Los Banos, the Philippines and the Central Coordinating Board in Bangkok, Thailand, on the other.

Two proposed Regional Workshops, one for the purpose of compiling a Biology Text-book for the Region and the other for the purpose of studying a new approach to the teaching of science at Primary (Elementary) school level, called the "Process Approach", were discussed.

During the tour of Osaka, Kyoto and Nagoya, the delegates were guests of the Japanese Government. Visits were made to several educational and industrial establishments with most fruitful results for all. Among the places visited were the Osaka Prefectural Science Education Centre Osaka City University to meet the Committee for South-East Asian Studies (OCUSEA), the Shimadzu Science Equipment Division Factory at Kyoto, the Nagoya Municipal Science Museum with which the delegates were most impressed and the Yagami Science Equipment Manufacturing Company at Nagoya. The Japanese National Commission for UNESCO also very kindly arranged a half-day historical tour of Kyoto for the delegates.

A very useful and informative symposium on science and mathematics education in Japan was held on Sunday 6th April, and the eminent Japanese science and mathematics educators who took part in this symposium were Professor Yoshinobu Kakiuchi, a physicist of world renown, Professor Kentaro Yano, Professor Tadasu Kawaguchi and Mr. Hideo Ohashi, as well as science and mathematics specialists of the Ministry of Education, Japan.

The Steering Committee is most grateful to the Government of Japan for its cooperation in providing the Conference Room at the National Education Centre and the cost of local transport, and to the Japanese National Commission for UNESCO for organizing the Meeting and providing all the supporting services.

It is proposed to hold the Sixth Meeting of the Steering Committee in Saigon, Vietnam between the 21st and 24th of October, 1969, subject to approval by SEAMEC and formal negotiations with the Government of the Republic of Vietnam.

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